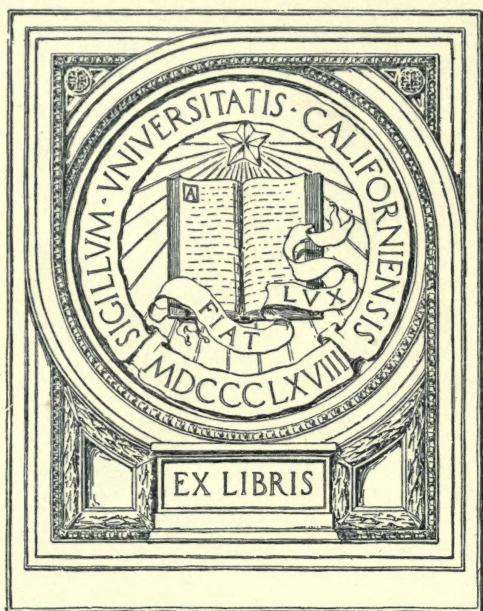


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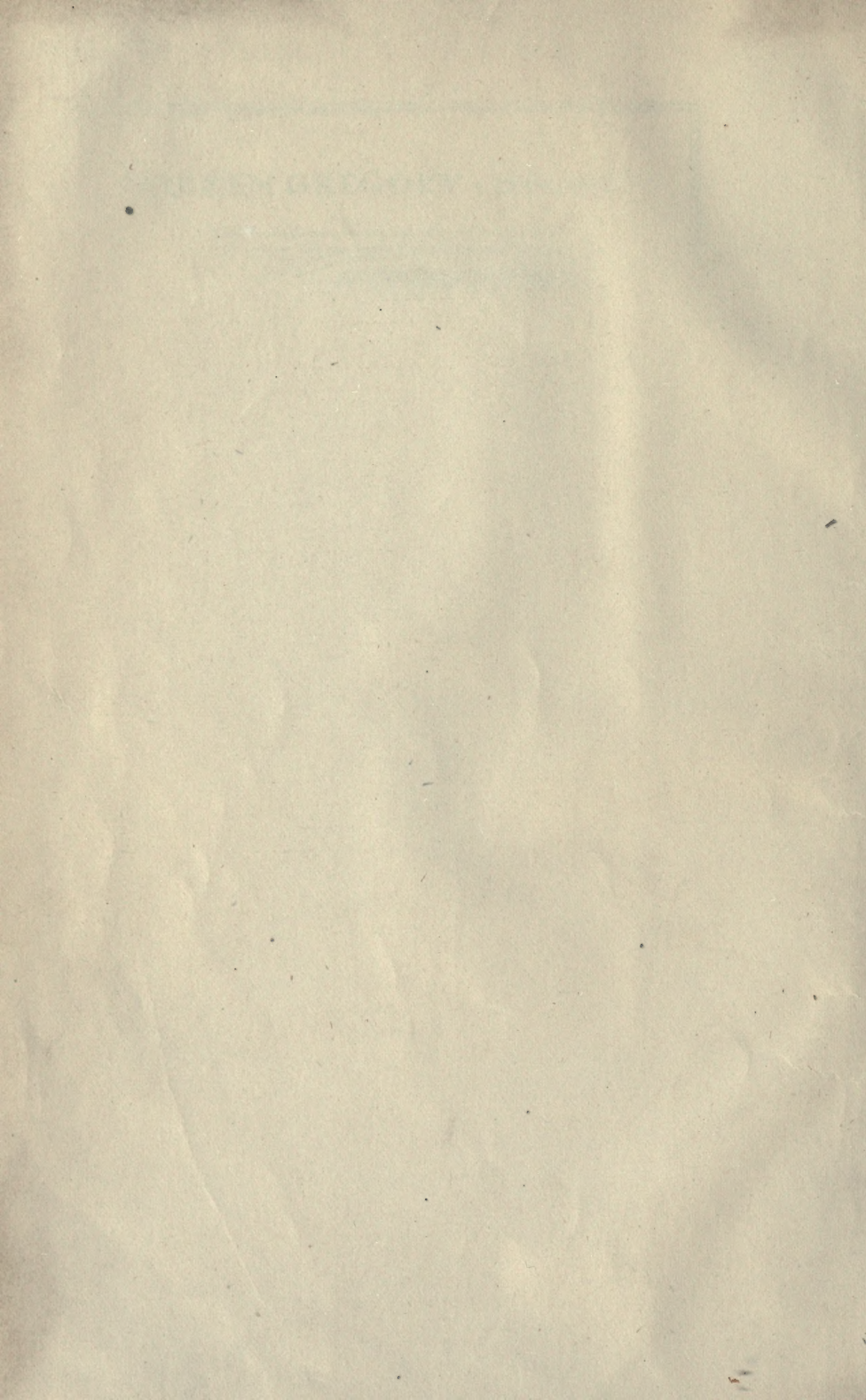
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WARREN GREGORY, a native Californian, received the A.B. degree at the University of California with the Class of 1887. He was graduated from Hastings College of Law in 1890, and for 37 years practiced law in San Francisco. He served as president of the Alumni Association and as a Regent of the University of California from 1919 to 1922. This book was purchased from the income of a memorial fund established by his family.

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No. 1

OUR PUBLIC SCHOOLS.

BY CHARLES H. SHINN.

TEACHING school is one of the occupations in which a person is, as it were, a public character, to have each one of his or her acts examined with critical solemnity, and commented upon with that delightful freedom comparatively venial when some one else is the subject, but startlingly unpleasant when it becomes personal. Not yet in any civilized region of the world is the man or woman whose thoughts, vitality, and whole existence are devoted to the service of education rendered, except on rare occasions, fit reverence as teacher—in which word, rightly interpreted by noble lives, there lies the essence of prophet and high-priest. To those of us who, outgrowing in some degree our earlier enthusiasms, have learned to see dangers in what men call progress, and gathering storms in the not-remote future for nations and communities, there is, humanly speaking, small hope for the race, unless manhood and womanhood are fostered in home and school by pure lives, fervid zeal, gentle persuasions, and continual watchfulness.

While Europe is being shaken by the tread of armies, and grows black with the smoke of factories; while the financial centers of the world are slowly swinging from London and Paris to New York; while the mightiest capitalists and the most reckless speculators this stormy earth has ever known are playing with transcontinental railroads and with the crops of States as with the ivory

checks of a gaming-table; while acres of corn and leagues of wheat are each year sown on newly-broken soil, and the human tide sweeps over what were waste wildernesses with a swiftness unparalleled in history; while Isthmian canals, Asian railroads, flooding of African deserts, and similarly bold propositions take visible and practical shape; while these and such as these are brilliant elements of the complex modern world, still now, as ever, it is divinely true that the germ and potentiality of all that may be is in the child being taught, is in the lessons he receives, is in the purpose and character of the person who teaches him.

The greatness of a teacher's responsibilities can never be laughed down, nor belittled, nor ignored. Standing forever by the gates—messenger of the gods, translating their meanings not to men, worn, grey, hard of hearing, dull of sight, but to children, young, eager, swift-footed, rapturous, keen of apprehension—the true teacher is as one chosen from a multitude, and given a sign from heaven, and so anointed and set apart forever. To feel this truth strongly will give purpose and dignity to the teacher's character. The time is coming, let us not forget, when "I am a teacher," will carry as much weight and professional meaning as, "I am a lawyer, or, "I am a physician." This is logically true, because neither law nor medicine are more a part of ultimate human development than is the profession-to-be of teaching. As the world grows wiser, the need of schools and colleges will be felt more and more; the demand for professionally trained teachers will increase.

To make teaching a recognized profession, the friends of education must develop the professional feeling. Now, teachers, as a class, do not know enough of each other, or of the work which is being done in allied fields of human thought. They must link themselves more closely with the grander movements of the times. Suppose that the teachers of each county sent delegates to a State convention, where the best lecturers and teachers of national reputation were present; then, suppose that, after a week of solid work, and after even the most lagging soul had caught the march and impetus of the occasion, delegates were chosen to a great national convention, meeting each year to unify the school laws of the States and the text-book systems, to brighten knowledge, and to strengthen relationship. Then, too, there are social science associations both in the United States and in Europe, and earnest meetings of geologists, philologists, and student-masters of every sort. Shall not the common-school teachers of America send delegates to each of these great convocations? Will they wait until new knowledge has drifted into text-books, or will they take it as it falls fresh and glowing from the lips of the leaders of human thought? The movement to-day is toward unification, and a thorough organizing of human forces into compact battalions.

The teacher of the future is to have a professional training as long, as costly, and as arduous as that required for lawyer, physician, or minister. He will feel himself allied with an influence social, moral, and intellectual, which is everywhere known and respected. His diploma, once won, will pass current in every civilized community. A National Department of Education will then form a part of the governmental machinery, ranking in importance with that of

the Interior, and bringing the systems of the several States into healthy agreement. For years there has been a Commissioner of Agriculture distributing seeds, making costly experiments with new plants, and publishing ponderous reports on whatever appears of horticultural interest. To have a Commissioner of Education were of infinitely greater importance to Americans; for, although no two farmers in the United States can farm in precisely the same way, yet farmers' sons and daughters everywhere need the same sort of a strong, harmonious mental development.

It happens at present that there is an outcry, partly ignorant, partly malicious, against precisely what eminent educators feel is best for the teachers, namely, thorough professional training. "Would you make a corner on teachers?" cry these ridiculous people. "We object to hard examinations, normal schools, and these years of preparation you talk about. We have daughters who want pin-money, sons-in-law who can't find anything to do except teaching. If we have n't, our neighbors have." Stripped of non-essentials, the under-thought is often of this nature. The answer must be plain and decisive, and those to whom knowledge of the wider sort has been the breath of life should stand by their guns bravely. Sometimes, and indeed often, men, who in their hearts know better, will for social and political reasons give a cowardly assent to foolish and ruinous doctrines, hoping dimly, indeed, that the deluge may not come until after their time. Most of the evil in this world exists because men have not the courage to fight for their own convictions.

In the vitally important matter of choosing a teacher for a public school, the only honest rule for trustees and parents to follow is to require not mere fitness—for there are many after a fashion fit—but to demand the highest, most complete fitness. No one ever knew too much to teach school successfully. The common phrase is a fallacy. Truly, indeed, a person, though with dazzling attainments in certain ways, might lack important connecting links, or fail to possess the power of imparting his knowledge. But these things would bar success in any field of intellectual activity. It is impossible to know too much of a trade, art, or profession. The young men and women of a community, if they choose to teach, must first make themselves thoroughly fit—capable of the highest tests, and this in other words means professional training. How much more this means than technical and hasty examinations can ever decide, and how much healthier mental growth is thus secured, can hardly be expressed by any comparison. It is right that every person now teaching successfully should pass unchallenged. But if from this time forward only graduates of State universities and colleges of the first rank, and of normal schools properly equipped and officered, were allowed to teach, the *morale* and efficiency of the profession would be infinitely better. Doubtless many successful teachers began without this professional training, and struggled up, paying double tax of toil and brain-waste for each victory won. To them all honor; but we must remember that the better teacher a person is by nature, the better weapons he or she should be given—Damascene steel and Toledo blades from heaven's illimitable armories, where men are made ready to fight the gods' battles against woe and ignorance.

Returning to the subject of choosing teachers: if the mass of people were good judges of the fundamental differences between teaching and pretending to teach, the case would not be as bad as it is. Unfortunately a pleasant, good-natured young person, who has a knack with children, and flatters the parents, can in many localities, mispronounce half the words in the language, foully assault the Queen's grammar, and show utter, blind ignorance of the most ordinary and vital facts of human progress and of civilized existence, without exciting comment or arousing inquiry. He or she "has a certificate, is popular, keeps good order. What more," cries the stupid giant Public, "can you restless critics require?" And so he goes to sleep again, as of old, with much grumbling.

Meanwhile the heavens grow thick with combat, and the war is at our gates, and forces strong in their growth clash and mingle, that the newest and best may have birth, after long wrestle with men and with demons. Nations, governments, systems, religions, society itself, and, indeed, the whole fabric of civilization, are being tried by fire, and questioned as to the spirit that is in them. If they falter or fail, they perish. In the midst of complex movements and currents, spiritual and intellectual, whose full meaning no one man can fully grasp, the whole and only safety for any people lies in choosing and obeying wisest leaders, not merely for places of national honor, but more particularly for the sort of fundamental work which the teacher is appointed to do. We need a man or woman of pure mind, singleness of purpose, and simplicity of speech, for each one of the schools in city and country, in each county and State from Hatteras to Mendocino, and from Key West to the frontiers of Montana. It has grown to be a greater question than one of mere expediency. The question of how to better educate the people finds place in presidential messages, and in lectures by college professors. The writers for dailies, weeklies, and monthlies begin to consider it. No matter what a man does, or hopes to do, if he be intelligent, he cannot but feel that the influence of the public school system is about him as a subtle atmosphere, folding his daily life and making better things possible. Beyond and above all this, the truth that the existence of the American republic, and the perpetuity of our institutions, are involved in the problem of education faces us this moment, the living issue of the hour, with mute gesture, dreadful and appealing. This has been thought, said, and written time and time again. On this the terrible prophecy of Macaulay was based. Yet, the fact itself is inexpressibly portentous. Heedless, brutal voters, when in the majority, can and will make vulgar and poisonous enactments, follow wandering lights of numberless "isms," become slaves of prejudice and tools of knaves, lay the ax at the roots of prosperity, and stab the genius of social order to the heart. If to-day, or to-morrow, or next year, the apathy of the friends of education leads them to relax their efforts to strengthen its foundations and widen its bulwarks, there will come a time, as the struggle deepens, when that earlier forgetfulness may prove fatal. Indeed, for those who try to educate the young each day is doomsday, and has an influence infinitely widening through space, so far as we know endless, and immeasurably solemn. The same is true of those who by their friendship or enmity may help or mar the harmonious development of

what is wise and pure in our educational system. The men who write editorials and essays should look well to their work, nor ever let the desire to say something brilliant, or witty, or new, outweigh that wish to speak the truth by which alone writing is ever justified. Richard Grant White, purist, and professional critic of everything American, has recently furnished, in the pages of the "North American Review," a noteworthy example of "reason's lack and judgment's eclipse." The title of Mr. White's article is, "The Public School Failure." It claims to be a judicial indictment of the system, but it is merely a recital of various abuses, real enough, but being reformed by educational workers, and affording no just ground for Mr. White's hasty, reckless, and superficial conclusions. He levels his lance against that general education which is, under heaven, the only hope of the modern world, sore beset by dangers countless, and trying to arrange in some enduring way for all men just governments and better social relations. This we shall do in the fullness of time, but those who stand by and cast a stone at us are somewhat to be blamed, much to be pitied. They furnish weapons for the sectarian assaults of the classes who are scheming to obtain a division of the school funds; but in the future as in the past we may have courage, and go on building our walls, though we lay the mortar with one hand while wielding the sword with the other.

Concerning those men and women who teach school, it seems to one who stands somewhat apart and looks upon the whole business with remembrance of his own teaching days, and yet with the varied experience of other occupations to guide him, as if the need of needs in the teachers of to-day were sympathy with and knowledge of life as it is, complex, mysterious, and yet in nature divine. That the teacher should be one apart, dignity-laden, sober-eyed, and unduly formal, is one of the ancient dogmas, in no way to be revered by the modern world. The thoughts and sympathies of the true teacher go wherever men and women toil and conquer, not only in the realms of books, but in the out-door world, gathering hints of what to teach and how to teach it. Where sailors in midnight seas lie along the slanted yards, clinging fast with mighty thews as they furl the straining sails; where, deep in dripping mines of Nevada and California, men grope along the metal-bearing ledges with pick and giant powder and diamond drill; where on breeze-swept hills looking down on azure seas, or in valleys wide and fair, the husbandman goes out to sow, the *vigneron* gathers grapes, the orchardist buds and grafts; wherever, in short, the human activities are free, healthy, and progressive—there, now, and forever, the true teacher will find guiding hints of what to say in school-room and by fireside, to pupil and parent. Thus, if one loves the work, these scattered hints, blown by silver winds and floated by shining seas, will widen and brighten, till in the teacher's heart there are voices of many lands, music of many epochs, and the plain realities of life shall glow and gladden in his speech, shine about his daily path, and glorify even dull moments and hard tasks.

IF vexed with a child when instructing it, try to write with your left hand. Remember a child is all left-hand.—*J. F. Boyes.*

SPECIAL ENDOWMENTS.

BY A. N. CLARK.

[Birmingham, Conn.]

WHEN Paul Morphy plays seven games of chess at once, and blindfold; when young Colburn gives impromptu solution to a mathematical problem involving fifty-six figures, we are struck with hopeless wonder.

Such power seems, by its very breadth of grasp, to be separated from our mental operations.

But when we observe further that these feats are attended by little or no fatigue; that this is the play, not the tension of faculty, we are almost tempted to regard it as a new kind, not merely a new degree, of intelligence.

These men seem to leap, not labor step by step, to their results.

The one sees through the tangled relations of a complication of moves, the other of a complication of values, as readily as we see the relation of two and two.

We seek in vain for the secret of this mastery.

It is as inscrutable to those who have it, as to those who have it not.

When we wonderingly inquire of them the secret of their power, in grasping so readily these complicated questions, they only answer by inquiring, with wonder, in return, why we cannot do it? Our impotence is as inexplicable to them as their genius is to us.

They cannot think otherwise than in the manner of comprehensive grasp, and thus they deal with every similar problem in life.

In such remarkable examples, the special adaptation to certain exercises is quite apparent; but, though it be in a less striking degree, it yet probably exists in every individual.

The boy distinctively endowed with the mathematical faculty sees nothing but number and dimensions; his mind feeds on these. Another boy loves application of force, builds wheels and mills; his head is full of cogs, and levers, and eccentrics, and after he has gone out to his engineering in the great machine-shop of a modern world, the old corn-chamber at home is lumbered with his abandoned, mysterious contrivances. Still another is fired with the mystery of form. The dog, the cat, the wagon, are favorite themes for his pencil; he puts an eye and a nose to every triangle, and paints faces on the wheels of his mechanical brother.

In all this there is something more than ability. There is an attraction to these themes and a fullness of inspiration seemingly irresistible.

Such minds run with great agility; they leap, they bound in these chosen directions: while, if rudely forced into another, they become strangely subject to depression; they lose their spirit, and languish and droop.

Varieties of endowments are, after all, only so many different pitchers dipped in the same great stream. Painter, musician, mathematician, teacher, the gift is an accident of organization; the duty conferred by the gift is an obedient, do-

cile, loyal following of its leading, and adaptation of its opportunities to the highest possible ends: the results of such loyalty will be prosperity and success.

This fact in human nature constitutes an important, but often neglected element in education.

The question arises to the thoughtful teacher, how to educate thoroughly and evenly, and yet in a manner to develop this natural bent.

The prevailing systems of public education certainly make little or no provision for even the recognizing of any such endowments.

The system of bringing hundreds of children together, into one great building, and overtaxing by numbers the labor of the teacher, tends to suppress rather than to develop special talent.

The duties of life and our diversity of gifts would seem to demand that no system be adopted which tends to suppress talents where they have been given, or attempts to create them where they have been denied—that in the forming, plastic period of youth right conditions for growth and expansion of special gifts should be earnestly sought, and eagerly coveted.

If proper means for cultivation are not provided, the child, like Lord Byron and Hugh Miller, will seek to gratify by stealth the wants of that special talent which God has given him.

Educate in like manner two children of different tastes, and, though they may be forced into a similar mold, yet they will resemble each other only as the trees which the European gardener trims into like artificial forms; the elm, the oak, the willow, all sternly served alike, and each almost as good as dead for its inability to branch out into the peculiar shape with which its Creator endowed it.

So children thus educated fill some position in life, but, too often, fail to find that for which the Creator designed them.

But in our great zeal in cultivating the special faculties, we should not neglect to give due attention to those less endowed by nature. All should be simultaneously educated, that the structure we erect may be supported and strengthened by a well-proportioned development of all the faculties.

The several branches in our course of study should be arranged with due regard to each other, as well as to the great aim in view.

Such a course should be practical, that the youth may have something more than a mere bundle of either superficials or theoreticals to call to his aid when the stern realities of life are crowding upon him.

He should be so taught that the special talent upon which he relies for future prosperity and success shall be properly disciplined and strengthened by his preparatory course of training.

But we should not be too rigorous in our disciplinary pruning process.

We should give the faculties ample room to develop and expand, that our labors prove not as futile and injurious as do those of the vine-dresser when he follows too literally the rules and the theories he may have adopted.

He prunes and ties up the tender, growing plant that it may extend only to a limited distance, and in prescribed directions. But he finds out, too late, that his systematic course of pruning and trimming, however judicious in

many respects, has failed to make provision for sufficient freedom on the part of the plant to expand as its nature required.

Such culture does not develop the vine in its full perfection; and child-culture, involving a similar error of a disregard of the expressed demands of individuals, will always fail in developing the highest type of manhood.

One of the greatest problems, therefore, in the educational policy of to-day, is the adoption of a systematic, comprehensive culture, that shall be free from undue repression, and shall fully satisfy the demands of every special endowment.

GRAMMAR.

BY HON. M. H. SHERMAN.

[Superintendent Schools, Arizona.]

THERE is no subject taught in our public schools upon which there is a greater diversity of opinion, as to the method of instruction, than the subject of Grammar. When an old system is going out of use, numerous new ones come in to take its place; and, for a time, there is a period of experimenting, endeavoring to determine which is the best substitute. There is such a period of transition to-day in progress as to the teaching of grammar?

During the middle ages, reaching even into modern time, the Latin was the language of cultivated thought. To our day it has been the scholastic language. It has been the model of literary effort—the criterion of excellence. Having held this paramount influence in our literature, it naturally became the model from which an English grammar was constructed. Even if such an attempt had been made to build upon other than a Latin basis, such an attempt would have met with disastrous failure, as it would have encountered the far stronger convictions of settled prejudice.

In a historical view of the English language, reasons are much more apparent why the Latin should serve as a literary rather than as a grammatical model. The Latin, it may be said, through the Norman-French, refined the rough Anglo-Saxon, making it capable of an elegant literature. Great has been its service in forming the style of English authors. But its effect on English grammatical constructions has not been at all proportionate. In this latter direction its influence has been to break down old forms without substituting new ones.

To-day historical study is permeating all branches of knowledge. Etymology is being pursued with an assiduity as never before. The history of the English people, and of English words, has led the student among the folios of Anglo-Saxon manuscript. Chaucer is better appreciated and known, and, with the study of modern languages the faith in the old Latin idol has been very much shaken.

The construction of an English grammar, from a Latin model, using not only a foreign but a dead language for the basis, has had much to do in making, in the past, the study of our grammar such a dry one to the pupils of our public schools. It has been the cause of so many remarks like, "I knew nothing of English grammar till I studied Latin," or, "All the grammar I know, I got from the Latin." These remarks have been too true. Brown attempted the authorship of a work that would exhaust the subject, leaving nothing more to be said. His work was little more than a compilation. He did not deviate from the Latin idea.

Among the many varieties of grammars to-day in use, there are those, wherein the fact is recognized, that the English, although a composite one, is of itself a language, and the grammar of which is best presented by its history and growth. It is, perhaps, not within the province of an article in a school journal to signal out this or that as the best grammar; but my experience in the school-room convinces me that best results are attained by the use of grammars showing the origin of words and of grammatical forms.

The prime effort of a teacher, in presenting the subject of grammar, should be to divest it of its abstract character as much as possible, and to make it a living reality. To do this, explain idioms, illustrate the growth of grammatical forms, show the origin of words, present old forms of spelling, call attention to odd constructions, read extracts from Chaucer. By these means interest is also created, curiosity is excited, and the real nature of grammar impressed upon the mind of the pupil.

For instance: the pupil is aided very much by explaining, in the conjugation of the verb "to be," that *am, art, is, are*, are formed from an obsolete root *as*; that "was" is from *wesan*; that "be" is from *beon*; all meaning *to be*. There is then a reason why different words are met with in the conjugation of one verb.

The infinitive is better understood by explaining that "to" was only used with the dative form in Anglo-Saxon; but in the process of time, it has come to be used before the infinitive form of the verb in all except a few cases.

The idiom, "a ten *foot* pole," is readily explained by showing that the word *foot* was originally a genitive plural in such an expression. It was declined in the singular; *Nom. fót, Gen. fótes, Dat. fét, Acc. fét*: in the plural; *Nom. fét, Gen. fóta, Dat. fótum, Acc. fót*.*

ENNY man who has kept a skool for ten years ought to be made a mager-gineral, and have a penshun for the rest ov his nateral days, and a horse and waggin tew dew his going around in.—*Josh Billings*.

* The principal use of the accent, in Anglo-Saxon, was to broaden the sound of the vowel over which it was placed. It is frequently said from the pulpit that "God" and "good" were the same in Anglo-Saxon. The two words were as different then as now. "God" was spelled as to-day; "good" was spelled *gód*, the accent making it altogether another word.

THE BELLS OF LYNN.

BY FRED. E. WEATHERLY.

WHEN eve is growing gray, and the tide is rolling in,
 I sit and look across the bay to the bonny town of Lynn ;
 And the fisher-folk are near,
 But I wis they never hear
 The songs the far bells make for me, the bonny bells of Lynn.

The folk are chatting gay, and I hear their merry din,
 But I look and look across the bay to the bonny town of Lynn ;
 He told me to wait here
 Upon the old brown pier,
 To wait and watch him coming when the tide was rolling in.

Oh, I see him pulling strong, pulling o'er the bay to me,
 And I hear his jovial song, and his merry face I see ;
 And now he's at the pier,
 My bonny love and dear !
 And he's coming up the sea-washed steps with his hands outstretched to me.

Oh, my love, your cheek is cold, and your hands are stark and thin ;
 Oh, hear you not the bells of old, the bonny bells of Lynn ?
 Oh, have you nought to say
 Upon our wedding day ?
 Love, hear you not the wedding-bells across the bay of Lynn ?

Oh, my lover, speak to me ! and hold me fast, mine own !
 For I fear this rising sea, and these winds and waves that moan !

* * * * *

But never a word he said !
 He is dead, my love is dead !

Ah me ! ah me, I did but dream ! and I am all alone,
 Alone, and old, and gray : and the tide is rolling in ;
 But my heart's away, away, in the old grave-yard at Lynn !

—*Temple Bar.*

INSTRUCTORS should not only be skillful in those sciences which they teach, but have skill in the method of teaching and patience in the practice.
 —*Dr. Watts.*

NEITHER do you school-masters, a set too often cheated of your wages, despise the goddess Minerva ; it is she that brings you new pupils.—*Ovid.*

I CAN easier teach twenty what were good to be done, than be one of the twenty to follow my own teaching.—*Shakespeare.*

THE teacher is like a candle, which lights others in consuming itself.
 —*Ruffini.*

ARITHMETIC.—METHOD OF PRESENTATION.*

BY MALCOLM MACVICAR, PH. D., LL. D.

II.

1c. *Cautions which should be regarded.*1. Remember that *tact* is a *part* of *method*.

The study of the course which should be pursued in presenting a subject can never make a successful teacher where *tact* is wanting. *Tact* enters as a necessary element into the *method* of every first-class teacher.

2. Remember that the method of presentation indicated in this or any other article can only be an outline guide.

Hence, to produce good results, the filling out of such outlines must be the spontaneous product of your own inner experiences. You must never forget that to be successful you must work in your own harness.

3. Remember that what the pupil may at first appear to know, or to say, or to do, is not to be taken as a sure exponent of his real inner consciousness.

A large portion of your pupils will state and do mechanically what their book states or requires to be done, or what their teacher or classmates have stated or done, without having any consciousness of the reality. Hence, whatever your method, be sure and hold the pupil to his work, and probe him until he describes everything from his *own consciousness* of the *real*.

1d. *What should be taught.*1. The perception of the *succession* of numbers from 1 to 10, and the use of the words *one, two, three*, and so on to *ten*.2. The use of figures in representing numbers, or the change of the ear language, *one, two, three*, and so on, into the eye language, 1, 2, 3, 4, and so on.

3. The analysis of each number from 1 to 10 into ten parts in all possible ways, and the addition of any two numbers whose sum is not greater than ten.

4. To count or name the consecutive numbers, *one, two*, and so on, in their order both forward and backward, or to count by addition and subtraction, and to discriminate the number from the thing numbered.

5. The use of the sign of addition (+), the sign of equality (=), and the sign of interrogation (?) or question mark.

6. Practice in making figures and drill exercises.

1e. *The perception of numbers, how presented.*1. Test and sharpen the child's perception of *one* or *unity*, by causing him to handle and point out single objects of various kinds.

Thus, *first*, let the teacher ask the pupil to show him *one* ball, *one* book, *one* boy, and so on. *Second*, let the teacher present the objects and call upon the pupil to name how many balls, books, desks, and so on.

*From *Teacher's Manual*, published by Taintor Bros. Merrill & Co., New York.

2. In presenting the numbers from *two* to *ten* inclusive, proceed first by analysis, then by synthesis, comparing in each case the new number with the number immediately preceding it.

The following example with the number *three* will suggest the method for all numbers up to ten.

- (a). Place for example where they can be seen by the class, two books and three books. Ask the class to notice carefully each pile of books. Remove one of the three books, and ask the class how many books now in each pile. The answer will be, "Two books." Put back the book, and ask how many books in the larger pile. The answer, if they do not know the word *three*, will be "*Two* and *one*." In this case give the name *three*, and then ask the questions, "What do you mean when you say *two* books?" "When you say *three* books?" The answer to this question, based on the previous analysis, will be, "*Two* books and *one* book."

Continue this drill, using various objects, until the perception that *three* is *two* and *one* is fixed sharply in the mind. Pursue the same course in presenting higher numbers up to ten.

- (b). After the perception of the relation between each new number and the number preceding it is given, let it be fixed in the mind of the pupil by a drill : *first*, in naming the number at sight of the objects ; *second*, showing the objects as the teacher names the number. Let this drill include each time all the numbers already mastered, and let it be conducted in a spirited manner.

1 f. *The use of figures, how presented.*

Observe the work here to be done is simply to change the sound or ear language into a brief eye language ; hence, the following course :

1. If the child can read print or script, place the words *one, two, three*, and so on up to *ten*, on the board. Let the pupil read the words, and at the same time show the teacher the corresponding number of objects.
2. Let the teacher point to the numbers written on the board in irregular order, and call upon the pupils to exhibit a corresponding number of objects, directing their attention to the fact that their eyes tell them each time how many objects to exhibit.
3. Place the figures under the words on the board, thus :

<i>one,</i>	<i>two,</i>	<i>three,</i>	<i>four,</i>	<i>five,</i>	etc.
1	2	3	4	5	etc.

Ask the pupils to observe how much easier and quicker the figures can be written than the words, and hence how much better it will be to use them. Proceed with the drill thus :

- (a). Point to the figures in irregular order, and let the pupil show the corresponding number of objects. After a short exercise, erase *one, two*, etc., and continue the drill by using the figures.

(b). Point to the figures rapidly, and call upon the pupils in turn to pronounce the names.

(c.) Assign for work at the seats, copying the figures on the slates. If figures are put on the board to copy from, let them be well made.

4. If the pupil cannot read the words *one, two, three*, and so on, present one, two, three, etc., objects, and let him pronounce the number, while the teacher writes on the board the figure representing the number pronounced. Drill in this way until the figures 1, 2, 3, 4, and so on are associated in the mind of the pupil with the sounds *one, two, three, four*, and so on. Then proceed with the drill as directed in 3a and b.

1e. *The analysis of numbers, how expressed.*

This exercise may be conducted as follows :

1. Take for example 8 books or other objects, and place them in one pile, where they can be seen by the class. Separate them into 7 books and 1 book, and let each pupil state orally or write on his slate, 8 books make 7 books and 1 book. Present in the same way the fact that 8 books make 6 books and 2 books ; make 5 books and 3 books, and so on.

2. Let each pupil be required out of class to use objects and analyze each number and record the results on his slate, as indicated for the class exercise. Let these results be read as a review in class.

1g. *Counting, how presented.*

1. Observe, counting proper may be defined as the process of adding one at a time and naming the results, thus giving the consecutive numbers, 1, 2, 3, 4, 5, and so on. The term is now, however, applied to adding or subtracting the same number consecutively.

For example, we count by addition by twos from 1 to 23 thus : 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23. Observe that in this case, commencing with 1, we add consecutively 2 until the sum is 23.

In the same number we count by subtraction by subtracting consecutively in the same manner. Thus, commencing with 28 and counting by subtracting *three*, we have, 28, 25, 22, 19, 16, 13, 10, 7, 4, 1.

2. Observe that when a group of objects are placed together, thus :

| | | | | | | | | | | | | |

and counted by pointing to an object and saying "*one*," then to another object and saying "*two*," and so on, the following three mistakes are generally made :

(a). The objects being already together, the pupil passes mechanically from one object to another, pronouncing the number without recognizing that he is adding one object at a time. Hence,

(b). He does not perceive that, commencing with an object, he has formed and named the number in order of the series of groups, 2 objects, 3 objects, 4 objects, and so on. Hence,

(c). He does not hold in his mind as he pronounces a number, the group of objects to which the number applies. For example, when in counting he says *four*, he refers simply to the object to which he is

pointing, not the group of objects composed of the object to which he is pointing, united to all to which he previously pointed.

3. To avoid the three mistakes just named, and to lead the pupil to form clear and distinct perceptions of the consecutive numbers and their relations to each other, arrange where they can be distinctly seen by the class, groups of objects representing the consecutive numbers up to ten, thus:

I II III IIII IIIII IIIIII IIIIIII

Pursue now the following course:

- (a) Commence with one, and point to the groups consecutively, calling upon pupils to name the number of objects in each group and the meaning of the number. Thus, as you point to the 1 object, let the pupil answer, *one object*. As you point to the 2 objects, he says, *two objects*. *Two* objects mean *one* object and *one* object. As you point to the 3 objects, he answers, *three objects*. *Three* objects mean *two* objects and *one* object, and so on up to ten.
- (b) After the pupil is able to define at once in this way all the numbers up to ten, require him to name the number of objects as you point to the groups, without defining; thus, *one* object, *two* objects, *three* objects, and so on. Finally, let him omit the word *objects*, and count abstractly, as you point to the groups; thus, *one, two, three*, and so on.
- (c) Let a group of objects be placed now before the class, and call upon pupils to count them by pointing to them one by one. As they count, ask them to state what they mean when they say *three objects*, *four objects*, and so on.

Observe that in this case the pupil must be led to see clearly that when he says "*five*," for example, he means, not the object to which he is pointing, but the *group* of objects composed of all to which he has thus far pointed and the one to which he now points.

- (d) Call the pupil's attention now to the fact that when he says *three* balls, *three* books, *four* boys, and so on, he expresses two things: *first*, the number: *second*, the thing numbered. Pronounce or write upon the board the number of different kinds of objects, and call upon the pupils to name the part of the expression that indicates the number, and the part that indicates the thing numbered.

1 h. *The use of Signs.*

The pupil's time is frequently wasted in writing out exercises with signs which are of no practical value; hence the following suggestions:

- (a) Whenever it becomes necessary in the pupil's regular work to use a sign, let its meaning and use be fully illustrated.
- (b) Avoid the use of signs in school-room work wherever they would not be used in practical life.

WHAT comfort some pedagogues might derive from the thought that wise pupils can learn as much from a fool as from a philosopher.—*Vedder*.

PRACTICE WHAT YOU PREACH.

BY MISS JENNIE HODGINS.

[Virginia City, Nevada.]

THIS is an old and homely adage, heard frequently, but forgotten as soon as heard. Familiar as household words to all of us, how many pause to think of the lesson it conveys? Few, I fear; for it requires so little thinking that, like all other simple things, we consider it worth none. The words certainly are short and plain enough taken individually, yet grouped in a sentence they are, it seems to me, worth pondering. Speech is a natural gift; few people think it any trouble to make use of it, and the majority of mankind not only *use* but *abuse* it. *They talk too much.*

I heard it remarked some time ago that a young lady graduate who has charge of her first school, talks, under the impression that she is teaching, until her hearers wonder that her vocal mechanism does not wear out, or, at any rate, become impaired. Young ladies, whether teachers or not, do talk a great deal, certainly, and not always do they *practice what they preach*; but they are not the only ones. "Company lightens misfortune," is another adage, if you will allow me to make use of so many, and in this instance young ladies have plenty of company. When we look around this vast world of ours, think of the professions that are monopolized almost entirely by men, hear them discuss, read their lectures, and then remember how few we can name, how very few we know, who apply in their daily life the principles on which they discourse so eloquently, we realize the difference between theory and practice.

By naming separately each walk in life, we might extend indefinitely the list of persons who act on the "do as I say, not as I do" principle; but one illustration will suffice. Talkers flourish in every profession, but in none, I think, do we find more than in that of teaching. The school-room seems to be their vantage-ground, whence they propagate ideas and theories which *they* never carry into practical use, and which no one else can. They do not pause to think whether their theories may be reduced to practice by others or not. They are quite confident that if *they* had time they could apply them, but just at present they are very busy. A great amount of talking remains to be done ere the mass of teachers is converted to their way of thinking, and that must be seen to before anything else. What matters it if, before that is accomplished, some other person demonstrates clearly that they are merely talking? They take up, then, another subject, that they know as little about as the previous one, and talk that threadbare.

For instance, a teacher thinks he knows a great deal about teaching arithmetic. He has a few pet ideas of his own on the subject. He has never tested any of them in his school-room, but he has thought of them and talked of them until he is almost persuaded that he *has* applied them. However, they sound well; he supposes they may be applied, and he proceeds

upon every favorable opportunity to inflict them upon others. Some honest, hard-working teacher, judging all men by himself, and deceived by the fine language and easy delivery of this *preacher*, thinks there may be some good common-sense ideas concealed beneath the flow of words, and goes at once to work to find them. Vain labor; for, like the mirage in the desert, the sense disappears just as he would grasp it, and he discovers that the splendid ideas of this would-be educator resolve themselves into mere empty words.

Teaching in practice and teaching in theory are two entirely different things. A teacher may rise in institutes, teachers' meetings, and gatherings of that sort, and lay out in one hour's discourse more work than a practical teacher can execute in a whole school term. It does not seem to the talker that he has done so—it is so much easier to preach than practice, that probably he will never find it out, for he will persevere in talking without attempting to practice; but nevertheless it is a fact. He has enunciated good theories possibly, although we may not agree with all of them. But let us enter his school-room, examine his classes, watch his mode of teaching, and we will find, in the majority of cases, that he does not even attempt to reduce theory to practice. He thinks it is no trouble at all to stand before an audience of teachers, all of whom are of average intelligence, and tell them how he would conduct such and such an exercise, how he would meet and master this and that imaginary difficulty. His vanity is flattered by his position and by the evident interest with which his remarks are listened to. He would consider it pleasant labor to spend a life-time at it. But the scene changes; he is no longer the pleasing lecturer, talking to an interested room-full of adults. He is a district school-master, presiding in the old log school-house over fifty, sixty, or seventy pupils, of all ages, sizes and grades; alike, it seems to him, in only two things—their love of mischief, and dislike of study. Or he may be a city professor, with not one room full of scholars under him, but several. In either case his position is changed. His audience is not now the interested gathering of teachers listening with rapt attention to his every utterance. His vanity is not flattered by their polite attention. On the contrary, his temper is severely tried by their carelessness and inattention. He wonders if they belong to the same order of animals as his previous audience. Just the same, dear sir. What they *are* you *were*. The change is in yourself equally as much as in your audience. Talking was pleasant work for you when you talked to congenial listeners, but practicing is not so pleasant now when your surroundings have altered. The difficulties that were so easy of explanation when only imaginary are just a trifle more difficult now. Patience; practice as you preached, and they are solved. Seldom if ever is the requisite patience and practice applied. He knew when he lectured that to take up each one of his principles and apply it to practical school work would be no light labor, but telling others how to do it is not so difficult, so he lays to his conscience the flattering unction that he has amply fulfilled his duty when he has done that. Perhaps he has, but were all others to follow in his footsteps, and preach without trying to practice, education would soon be only a name.

This is decidedly not a personal, though by no means an exceptional, case. There are any number of teachers who know how and what to teach, but they are too indolent to make use of their knowledge. They do not represent the great mass of good, practical teachers, however, and we can take care that we do not swell the ranks of the talkers by remembering the lesson taught in the words, "Practice what you preach."

THE ADVANTAGES OF IGNORANCE.

BY PROFESSOR F. W. CLARKE.

THE occasional blissfulness of ignorance has long been the subject of one of our most popular proverbs. Coupled with a positive statement as to the folly of wisdom, it passes from mouth to mouth with the authority of an oracle. But the support given to the dogma is usually of a passive kind. The doctrine is stated, but not defended; while on the other hand our journals teem with arguments in favor of education, upon the importance of schools, and about the best method of electing school trustees. The fact that the latter represent in their own persons the advantages of ignorance—that educated men can rarely attain to such superior positions—is never urged with anything like proper vigor. Education in one's self imbues one with prejudices concerning the education of others; and such prejudices, with their attendant partialities ought to be rigidly excluded from the management of public institutions. Accordingly, in actual practice, uneducated men are placed as supervisors above thousands of cultivated teachers; and thus, in spite of the schools, the superiority of ignorance is clearly demonstrated.

In every walk in life, in all professions, a similar superiority is daily manifest. At the polls, the trained and intelligent statesman is defeated by the loud-mouthed stump speaker, who knows nothing of jurisprudence, less of political economy, and only enough of finance to be able to draw and spend his salary with commendable regularity. The broadly educated, highly cultivated theologian is surpassed in popular esteem by the swaggering revivalist, who tears up human feelings by the roots as a child pulls up sprouting beans for growing the wrong way. In medicine, the quack has five times the patronage of the well-informed physician, and makes a fat living where the latter would only starve. Sick people are fond of liberal treatment, and like to be thought worse off than they really are. You have a slight cold, and the good doctor charges five dollars for curing you. But the brilliant empiric calls it congestion of the lungs, diphtheria, or pneumonia, visits you twice as often, and charges you three times as much, and you feel that you have got a great deal more for your money. Your ignorance chimes in with his, and both are better satisfied. Your stomach-ache is magnified into gastric fever; your boil be-

comes an incipient cancer; a slight chill indicates approaching typhoid. The quack flatters your self-love, exalts your own importance in exaggerating that of your disease, comforts you with a good, sympathetic scare, and depletes your veins and your pockets with admirable equanimity.

The old saying that "fools rush in where angels fear to tread" affords another argument in behalf of fools. To be sure, the natural history of the angel species has been but imperfectly studied; yet here again our very ignorance helps us. Theoretically, we should all like to be angels; but, practically, we prefer to stay where we are. Besides, familiarity with angels might be exceedingly uncomfortable; especially if they should take it into the ghosts of their late heads to visit us in spook-fashion, with the accompaniments of blue-fire and winding-sheets. But to the point again. Education makes men cautious and calculating; careful of precedents; afraid of mistakes. Many a time the brilliant audacity of a daring ignoramus has achieved successes which would have been unattainable to orderly skill and training. Lord Timothy Dexter, that most inspired of idiots, sent a cargo of warming-pans to the West Indies. The natives took the bottoms for sugar-scoops and the perforated lids for strainers, and Dexter gained a fortune out of his ridiculous venture. Zachary Taylor, whipped by a Mexican army, was too bad a soldier to be conscious of his defeat, and kept on fighting. His adversaries, astonished at his perseverance, thought he must have hidden reserves, and incontinently ran away. Thus Taylor won the battle, as contemporaries say, "by sheer pluck and awkwardness." "Against stupidity the gods themselves fight powerless." Stupidity, therefore, by all the rules of logic, must be superior to sense, and truly deserves, over all competitors, the crown of laurel.

The advantages of ignorance may be further illustrated by a reference to the disadvantages of omniscience. Suppose one of us could know everything, past, present, and future—how uncomfortable he would be! Looking back into remote antiquity, he would behold his ancestral ape engaged in the undignified performance of catching fleas. Turning with disgust from the past, he would find in the present many things as humiliating. Misunderstandings, bickerings, hatreds and slanders, unknown to ordinary men, would stand revealed before him. And, from the coming time, he would anticipate trouble and misfortune; he would see approaching evils far off in the dim distance; and not even the knowledge of attendant pleasures could quite unsadden him. To know everything would be to learn nothing—to have no hopes and no desires, since both have become equally futile. After the first excitement, one would harden into a mere automaton—an omniscient machine—with consciousness worthless, and volition a farce. Had Shakspeare been able to foresee his commentators, his greatest works would never had been written.

There are two sides to every question. Like the god Janus, all things are double-faced. Knowledge is not unalloyed good; neither is ignorance unadulterated evil. If ignorance were abolished, how many teachers would starve for want of occupation! Were all fools to become sensible, what would the knaves do for a living? The ignoramus, so long as he is ignorant of his ignorance, is comfortable and self-satisfied. The educated man sees how slen-

der his attainments really are, and discontentedly strives for deeper knowledge. Let us be impartial, whether we praise, blame, or satirize. Blessed be stupidity, for it shall not be conscious of its own deficiencies.—*Popular Science Monthly for January.*

WRITING LESSONS FOR LITTLE FOLKS.

HOW shall we interest these little folks in the writing lesson? Let them *write.*

Children like to talk, and next to talking comes this wonderful sign-language, writing. Let the little folks write often to learn to write, as you let them talk often to learn to talk, and read often to learn to read. But when you hear them talk or read, you are ready to prompt them, so that they will not fall into wrong practice. They need just the same care on your part when they write. Watch their fingers. Prompt them when they make the written signs, as you do when they make the spoken ones. Written language should follow very close to spoken language, with the child. He has to repress his voice in a great measure when in school. His mind is bubbling over. Let some of this mental energy work out of his fingers. Let him write as often as you can; never to tire him; never in a hap-hazard way; but under your eye, with care, with thought, with interest.

I know of no elementary branch into which more life and interest can be put than the writing. It gives the children something real to do. It is visible. Above all, it can be read. A child's first writing is to him truly wonderful. Do not confuse the child's mind with theoretical analysis, nor give him fragments of letters to write. The favorite method of teaching seems to be, first, a wearisome practice on elementary lines and fragments of letters; next, a tedious drill on isolated letters and disconnected words; and finally, a monotonous procession of copy-book saws and proverbs. This dull routine has robbed writing of its highest charm as a medium of expressing thought, and has placed the greatest obstacles in the way of both teacher and pupil. How would it seem in reading, if for many months the child was required solely to articulate letters, syllables, and words, disconnected from any thought? Whatever might be his gain in enunciation would be at the expense of all natural effort and interest.

Make the writing more a natural process. Give your pupils at the start a complete idea, a whole letter. As soon as they have learned a few letters, let them build up little words; and, as early as possible, let them write easy phrases and sentences. Let children write thoughts, as you let them read thoughts; and give them something interesting to write, as you give them something interesting to read. Their writing thus becomes a language to them, the same as their reading and speaking.

Talk to the children a great deal about the writing. Tell them about the letters, so that they will feel acquainted with them. Help them to see how much like the printed signs the written ones are. Write the letters on the blackboards, and attract the eye of every pupil by what you say about them.

The analogies between different letters will be a fruitful theme. We take the little dotted letter *i* first and study it, and when the children once learn to make it, they have only to double it, and leave off the dot, and they have the second letter, *u*. Then, again, the teacher takes small *n*, and shows the children the two parts of the letter. They learn to know these parts, and how to make the letter from them. The teacher tells them, if they just double the first part of *n*, and add to this the last part, they will have another letter, small *m*.

In this way, children will get to be as sure of each letter they write as they are of each word they speak. It is impossible to educate their minds far ahead of their fingers; but the latter will catch up, and will soon do better work for the child's knowing more about it. Illustrate freely on the blackboard; associate pleasant ideas with the letters; make the writing always a recreation to the child—never a task.—*L. D. Smith, in Primary Teacher.*

EDITORIAL DEPARTMENT.

FOR THE NEW YEAR.

THE merry chime of Christmas bells, joyous greetings, blithe, happy faces, be-token that we are in the very glow of the holiday season. Christmas is upon us—then gone. The New Year has come—before us stretch possibilities unbounded.

No matter what the stern experience of the Past, the Future, all are confident, has something better in store for us.

So, in opening this fifth volume of the JOURNAL, the editor hopes for greater interest in education, for a healthier co-operation of educators, and for more satisfactory results than at any previous time.

The JOURNAL has established itself as the exponent of the educational talent of the Coast. Our ablest teachers write for it; the majority of our best teachers are numbered among its subscribers.

At this season the vast majority of mankind is "turning over a new leaf"; so we also realize the necessity of some fresh incentive to renew the energies of those engaged in the teaching profession. What shall it be? In the present unfortunate condition of teacher-making, we can scarcely hope for a more general recognition of teaching as a profession. The new year, with the usual biennial session of the Legislature, opens the possibility of amendments to the Constitution, including one restoring the State system of certificating teachers.

Let every county superintendent and every professional teacher agitate this matter. We believe the time not unpropitious, and some good may result.

As for the JOURNAL, we hope not so much for new subscribers as for an educational revival among old ones. We want a pouring in of communications and articles; a general feeling of ownership on the part of teachers, in this periodical.

We want the new year to bring us new friends, and also to gladden our heart with the sight of old familiar faces.

To fail is the lot of man, so our shortcomings may be pardoned us by our own kind. If we have sometime wearied of tasks which appeared unvarying and endless—if sometime a number of the JOURNAL appeared with a smaller complement of interesting matter than usual—let us remember that perfection itself would be but monotonous were there naught to contrast and render it brighter by comparison. On our side, we trust that 1881 will prove to us (though the JOURNAL is no earth-born giant) what mother Earth was to Antæus, a reinvigorator, a source of fresh strength and courage.

To aid us in this task, with many a "Merry Christmas and Happy New Year," we again cordially greet every friend whose lines have added interest to our pages, instructed the students in our profession, and advanced the important cause of popular education.

THE JOURNAL FOR 1881.

THOUGH but a small number of articles for 1881 has been received to date, we are able to announce some contributors for the fifth volume. From Prof. E. R. Sill of the State University, J. B. McChesney of the Oakland High School, John Swett, and Prof. H. B. Norton, interesting and valuable papers are assured. Charles H. Shinn, editor of the *Horticulturist*, will furnish papers on "Our Public Schools," "The Teacher in Modern Thought," "Educational Movements."

Miss Clara G. Dolliver will contribute six essays, written in her usual charming style, on "Elizabeth Barrett Browning"; "A Quaint Old City"; "A Martyr to Art"; "A Peep into the 'Zoo'"; "Hero and Hero," (poem); "The Walls of Rome."

Prof. E. Knowlton will write on "Good Order," what it is, how secured and maintained; "Physical Education," how far desirable and by what means practicable in the school-room; "Memory," its proper functions and best means of culture; "Good Reading," what it is, how to teach it; "Declamations and Recitals"; "Recitations," how to conduct and record them; "Teachers' Institutes," their place, methods, and nature; "School Punishments," proper and improper.

In addition we shall publish about ten prize essays. The awards will be announced in our February number.

CONVENTION OF COUNTY SUPERINTENDENTS.

ONE of the most important features at the recent meeting of the State Association of Teachers, was the Convention of County Superintendents. About forty out of the fifty-two counties were represented. State Superintendent Campbell presided, and Mr. Lyser, of the JOURNAL, was elected secretary. Four day

and two evening sessions were held, and a wonderful amount of hard work done. The school law was taken up article by article, amendments discussed, and committees appointed on each important division. These committees, after considerable deliberation, reported changes and new sections. These reports were then discussed by the entire convention, and finally acted on.

In our next issue we expect to give a full report of the proceedings of this convention.

CHANGE.

MR. MYRON H. SAVAGE is no longer employed by the publishers of the JOURNAL in any capacity. After the severance of his connection with our office we learned of a bit of sharp practice on his part, which would be less amusing were it likely to prove as profitable as he evidently contemplated. When Mr. Savage was employed by us, he found connected with the office the "Pacific Bureau of Education." This "Bureau" had always been under the charge of the Business Manager of the JOURNAL, who did all the work connected with it, and received all the pay arising therefrom. The different "managers" employed by us had found this "Bureau" and left it. Not so Mr. Savage. After his dismissal we found he had copyrighted the name, and had even secured office-room in the same building as our own office.

We are of the opinion that such practices will hardly pay. A teachers' agency will still be connected with this office, to be known as the "California Teachers' Agency." Especial pains will be taken to send out none but first-class teachers—those thoroughly competent and of unimpeachable morals.

This agency is established for the accommodation of trustees and superintendents. The fees (which are received not by any one interested in the JOURNAL, but by the person who does the work) are but nominal, there being no intention of bleeding teachers.

From advertising page 1 all needful information may be obtained. Letters should be addressed invariably to the California Teachers' Agency.

THE MEETING OF THE STATE ASSOCIATION OF TEACHERS.

THE meeting of the teachers of the State at Lincoln Hall in this city, December 28th, 29th, 30th, was a decided and gratifying success. While the attendance was not very large (at no time exceeding two hundred), it included a marked proportion of representative teachers. Professor Norton, the president for 1880, presided with his usual dignity. The papers read were far above the average, comparing favorably with the best productions of the session of 1878.

Among the many notable papers it is difficult to select any as of peculiar merit. We must name the address of President Norton, Prof. Edward R. Sill's paper, and Mrs. Kate B. Fisher's essay on "The Proper Use of School Libraries," as valuable and permanent additions to our educational literature.

President C. C. Stratton of the University of the Pacific, and John Muir delivered evening lectures. The address of the former on the "Christian Higher

Education," was a logical, eloquent plea for moral culture in connection with purely intellectual training. John Muir described Alaska and its glaciers. Mr. Muir is a great painter with either tongue or pen. His descriptions were graphic and enchanted his delighted audience.

The question of publication of the proceedings has been left with Mr. Swett and Mr. Ham, the secretary. They have consulted with the editor of the JOURNAL, and arrangements will probably be consummated whereby the entire educational public of the Coast will get the benefit of one of the most valuable gatherings of teachers ever convened in California.

THE EDUCATIONAL REVIEW.

WHAT the great English reviews or our best-class American magazines are to contemporary literature, that the new magazine, *Education*, is to educational journalism. From a variety of causes we have, until now, been unable to devote space to an adequate notice of its promise and performance. To conserve the highest interests of education, to present in the most dignified manner from the ablest sources the question of education in all its phases, is the design of this new review. And judging from the two numbers already issued, the title-pages bearing the names of such writers as Dr. McCosh of Princeton, Wm. T. Harris of St. Louis, Secretary Dickinson of Massachusetts, Rev. A. D. Mayo, Supt. A. P. Marble, and others of no less note, we are satisfied that the *expert-side* of the educational question has now a fair presentation.

To subscribe for and support such a journal as *Education* is a positive duty with every one who claims to be a teacher. And moreover, to read such a publication will react, and make a teacher of the most indifferent school-keeper in the land.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

OFFICE OF SUPERINTENDENT OF COMMON SCHOOLS,
 _____ County, Cal., December 4th, 1880. }

HON. FRED. M. CAMPBELL, *State Superintendent of Public Instruction*:

DEAR SIR—Two of our districts voted taxes, as in full accordance with sec. 1836 Political Code. Trustees made report in July to Board of Supervisors.

Supervisors by mistake omitted to make the levy in accordance with sec. 1837.

They say that time having now passed by, it is too late to act further in the premises.

Will you please get Attorney-General's opinion as to whether this matter of time of levy is not directory alone, as we are taking steps to obtain a mandamus to compel the Board to make the levy. It is a matter of vital importance to these two districts.

Law should be so changed that levy and collection could be made at any time of year.

Very respectfully yours,

_____, Superintendent of Schools.

OFFICE OF THE ATTORNEY-GENERAL OF THE STATE OF CALIFORNIA, }
Sacramento, December 17th, 1880. }

_____, *Superintendent of Schools*, _____ County:

DEAR SIR—Your letter dated December 4th has been handed to me by Mr. Campbell.

Section 1837 of the Political Code requires that the tax therein provided for (district school tax) shall be levied by the Board of Supervisors at the time of levying the county taxes.

Section 3714 requires the Board of Supervisors to levy the county taxes on the first Monday of October. In respect to the time of making the levy, the law is clearly mandatory, and the Board would not be authorized to make it at any time other than that specified by law, viz., the time of levying the county taxes. This is made more apparent by sec. 1819, which authorizes the auditor in the case of county school taxes to make the levy when the Supervisors fail to do so. The Supervisors having failed to make the levy at the time of levying the county taxes, it is my opinion that they have no power to do it now. As bearing somewhat upon the question, I will call your attention to the case of *People v. McCreedy*, 34 Cal. 432.

Yours truly,

A. L. HART, Attorney-General.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN JANUARY.—*Mercury* is a morning star until the 19th, when the sun and planet rise together; from this time until March 3rd, he rises in daylight. On the last day of the month he sets at 5 h. 34 m., or 14 minutes after the sun. He is near the moon on the 30th. *Venus* is an evening star, setting on the 11th at 8 h. 56 m. P. M.; on the 21st at 9 h. 20 m. P. M., and on the last day of the month at 9 h. 41 m. P. M. She is near the moon on the 3rd. *Mars* is a morning star, rising on the 11th at 5 h. 49 m. A. M.; on the 21st at 5 h. 48 m. A. M., and on the last day of the month at 5 h. 43 m. A. M. He is near the moon on the 28th. *Jupiter* sets on the 12th at 0 h. 31 m. A. M.; on the 21st at 11 h. 52 m. P. M., and on the last day of the month at 11 h. 18 m. P. M. He is in quadrature with the sun on the 1st, and near the moon on the 7th. *Saturn* sets on the 12th at 1 h. 14 m. A. M.; on the 22nd at 0 h. 43 m. A. M., and on the last day of the month at midnight. He is near the moon on the 7th, and in quadrature with the sun on the 12th.

FROM the New York correspondent of the *San Francisco Evening Bulletin* we learn that some new methods in photography are attracting the attention of painters and sculptors. The instantaneous process, so-called, is not new, particularly to Californians, as remarkable results were obtained by Muybridge in taking pictures of horses while trotting rapidly. The process, as now used in New York, is of great value to painters in obtaining views of positions and expressions which heretofore had to be produced entirely from mem-

ory. Children at play, men wrestling, street scenes, ships under sail, with every wave and ripple, are transferred to the sensitive plate in the fraction of a second. A group of persons engaged in an animated discussion is taken so perfectly in every detail, that only a slight effort of the imagination is necessary to make them speak. Rogers, the sculptor, who has been well known for years through his celebrated terra-cotta groups, employed Rockwood, the photographer, to make some pictures of wrestlers from which he could work. The athletes were told to wrestle as they naturally would, and when they were in a position which the sculptor liked, the plate was instantaneously exposed, and a picture at that particular moment taken. Photographers say the old way of requiring a person to remain still while his picture is being taken will soon be out of date. Children can be taken while at play, and thus their natural expressions preserved. Instead of that sober, sedate, and frequently cross look which children put on when they sit for their pictures, they can now be taken with all the charm and grace which belong to youth.

A NEW process for obtaining stereotypes for printing has been discovered by M. Emile Jeannin, a sculptor of Paris, who proposes to use for that purpose the material known as celluloid. The process of preparation takes only half an hour, when the types are once set up, and the plates thus produced are remarkably suitable for working on cylinder machines, running at a high speed, being very light, flexible, and very durable. In this last respect, indeed, they surpass metal plates, affording, it is said, 50,000 impressions, whereas even an electrotyped copper plate backed with lead will only last for 30,000.

THE subject of a depraved taste in animals is an interesting one, which has not been studied as much as perhaps it might. In human beings it would seem to depend on ill-health of either body or mind, but in animals it would seem as if it might be present and the animal enjoy good health. One remarkable instance in an herbivorous animal we can vouch for. It occurred in a sheep that had been shipped on board one of the P. and O. steamers to help to supply the kitchen on board; but while fattening, it developed an inordinate taste for tobacco, which it would eat in any quantity that was given to it. It did not much care for cigars, and altogether objected to burnt ends; but it would eagerly devour the half-chewed quid of a sailor, or a handful of roll-tobacco. While chewing, there was apparently no undue flow of saliva, and its taste was so peculiar that most of the passengers on board amused themselves by feeding it to see for themselves if it were really so. As a consequence, though in fair condition, the cook was afraid to kill the sheep, believing that the mutton would have a flavor of tobacco. Another remarkable case has just been communicated to us by Mr. Francis Goodlake. This time a flesh-eating animal in the shape of a kitten, about five months old, who shows a passionate fondness for salads. It eats no end of sliced cucumber dressed with vinegar, even when hot with cayenne pepper. After a little fencing, it has eaten a piece of boiled beef with mustard. Its mother was at least once seen to eat a slice of cucumber which had salt, pepper, and vinegar on it. The kitten is in apparently good health, and its extraordinary taste is not easily accounted for. Even supposing it once got a feed of salmon mayonnaise, why should it now select to prefer the dressing to the fish?—*Nature*.

A NEW remedy for neuralgia has been introduced into England from the Fiji Islands. It is called *tonga*, and is brought in the shape of fragments of woody fiber, bark, and leaves, broken up into pieces so small as to make it hard to identify them botanically, mixed, and done up into balls about the size of an orange. To prepare it, the ball is soaked in cold water for about ten minutes, when the infusion is drawn off, and a claret-glass of it taken three times a day. The ball is then dried and hung up, and can be used over and over again for a year. The principal constituent of the remedy appears to be the stem of a species of *Raphidophora*.—*Popular Science Monthly*.

A COMPANY with a large capital has been formed in Paris to work up an invention for coating thread with silk. The invention embraces, according to the *Bulletin des Soies*, a

chemical process for covering linen or other vegetable threads with a mesh of silken matter in a manner similar to that in which metallic objects are coated with gold or silver. The process is dependent on the fact, which has long been known, that silk is soluble in several strong acid preparations.—*Ibid.*

CORRESPONDENCE.

THE SANDWICH ISLANDS.

LAHAINALUNA, HAWAIIAN ISLANDS, Dec. 18th, 1880.

A FEW items from the Isles of the Pacific may be of interest to the readers of the JOURNAL. The number of pupils of school age is 8,658, while 7,164 are enrolled as pupils of some of the schools. There are nearly 1,000 more boys enrolled in school than girls; this is not because the girls stay away from school, but because the number of boys on the islands exceeds the number of girls by nearly 900. The total population is 34,103 males, and 23,882 females, being 10,221 more males than females. The total number of schools of all classes, both public and private, is 210. The Board of Education consists of five members, four foreigners, and one native: all are appointed by the King, and hold office at his pleasure. The Board appoints an Inspector-General of Schools, who has duties similar to a County Superintendent, only he has power to dismiss any native teacher, and there is no appeal. The common schools are all *kept* by "*Kanaka*" teachers, so called. They do work according to the pay received, so anyone can judge for himself what a Kanaka school is. The pay is from .50 to \$1 per day; the average being .75, or \$150 a year. Plantations are paying from .75 to \$1.25 per day, or average \$315 a year; hence in the common schools can be seen an army of crippled, worn-out, antiquated, and lazy Kanaka school-keepers, who are wholly unfit for their work. So I consider the common schools, (all being free and taught in Kanaka) a farce. The Board are doing a great injustice, and can well afford to pay better; for *all* the foreign teachers are *well* paid.

We have here a good example of the workings or condition of public schools, if the *funds* are distributed among the various religious denominations. The Board of Education sustain scholarships in nearly all the *church* schools. They also pay \$28 per year for each pupil attending any boarding-school. So nearly every town has boarding-schools without number, as the Catholic, English Church, Mission, etc. Each of these schools assumes some *big* name, as St. Cross Seminary, Ahuimann College, etc. In our little town of Lahaina are three boarding-schools, and one Union school or Government school. The whole number of pupils in the town is 145. The result of this liberality in the distribution of the public school funds among the different churches is this: There is not a school-house outside of Honolulu, (and only one small one there) worthy of the name, and the work in many of the schools is no better than the house.

Völcano Mokuaweo, which is on the summit of Mauna Loa, 13,600 feet above the ocean, has been very active the past month, sending streams of lava down its sides into the ocean, and doing no little damage to some parts of the country. Some of the flows are now forty miles long and three wide. At night a river of fire forty miles long and three wide, flowing at the rate of two miles a day, gives a view seldom seen. The light is very often seen 150 miles away, while ashes and smoke are driven over 300 miles.

The native language is a very peculiar one. Twelve letters will represent all their sounds. Some of their words are very short, while others are very long: as *ha*, is four; *iwa*, nine; *iwakalua*, twenty. It takes twenty-one letters to write *fish*, *humuhumunuku-*

nukuapuaa; iwakaluakumamakahi is twenty-one. A native will pronounce any of these words with ease, and sound every letter.

The following statement may sound very strange. The highest and most abrupt mountains on the globe are here. Let me illustrate: Mt. Haleakala, the largest extinct crater in the world, being 35 miles in circumference, is 10,000 feet above the ocean, and the summit is within 10 miles of the ocean or Hawaiian Channel. This channel three miles from shore is over 15,000 feet deep. This added to the height of the mountain makes 25,000 feet of elevation, within thirteen miles. Where on the globe is there its equal?

During last summer's vacation I made a tour of the various islands. At Wailuku I met Mr. and Mrs. H. A. Kinney, who are teaching at that place. Both used to be teachers in the college at Washington Corners, Alameda County. Miss Mary A. Horner, an old teacher from Washington Corners Public School, is doing well in teaching a select school on the Island of Maui. Miss Emma Clark, of the class '79, Oakland High School, is teaching a very successful school at Hilo, on the Island of Hawaii.

A. C. BLOOMER.

DEFINITIONS IN THE LOWER GRADE.

THE other day I had occasion to hear my little brother, aged ten years, and in the fifth grade, recite his grammar lesson, which consisted entirely of definitions. The child was obliged to learn them word for word, and his efforts to get the right words in the right places, were sometimes ludicrous. Some of the words being totally incomprehensible to him, of course he had to depend solely on his memory for placing them aright. In one instance he stated that "the present tense denotes *competition* (completion) of time." One word was just as significant to him as the other, and not comprehending either, he got them slightly mixed.

What is the use of giving children of from eight to twelve years such definitions to study? Why not wait until they are old enough to comprehend them, and substitute simpler and more familiar terms until then? It is of very little use to explain them to the children, for their minds, not being able to grasp the connection between the unfamiliar word and its meaning, soon forget both. Children of average ability are obliged to spend hours in committing to memory a string of terms which do not instill into their minds the least particle of knowledge, or afford them any real culture. Would it not be far better to drill the child in the meaning of the terms by a gradual process of explanation and example, and be satisfied that he has a clear understanding of them without requiring him to go through all that rigmarole, which means little or nothing to him?

Take this one for example: "A *word* is a syllable or combination of syllables used in expressing thought." What child has not a better understanding of what a word is than any such definition can give him? He would not be able to explain it, of course; but it seems to me foolish, almost criminal, to waste a child's valuable time in requiring him to learn a definition that only confuses him. Nor is this all. Were the child required to learn one definition and "stick to it," until such time as he should be able to really "take it in" and understand it, it would not be so bad; but, either on account of the difference in text-books or the hobbies of teachers, the poor child is obliged to learn a different definition in each grade, till his mind is in a sad state of confusion, and his ideas so entangled in regard to them, that he leaves school with very indistinct impressions of the significations of the various terms. Of course, *all* teachers do not require the definitions to be recited *verbatim et literatim*, but many of them do, and take off credits if they are not so given. This seems to me to be one of the many mistakes in our methods of teaching, and well worthy attention and correction by all intelligent teachers.

XANTIPPE.

THE C. L. S. C.

This department is under the editorial charge of MISS L. M. WASHBURN, San Jose, to whom all communications relating thereto must be addressed.

THE C. L. S. C.

[The following article, written for a city paper by a C. L. S. C. member, whose enthusiasm grows out of her experience of its benefits, presents so forcibly its aspect to the busy wife and mother, that we reproduce it for our readers.]

"The advantages of the C. L. S. C. are so many and great, in comparison with most literary societies, that I would like to bring some of them before the public at the time when the work for the coming year is about to commence.

"The work is planned with direct reference to arousing and cultivating a taste for the kind of reading which develops intellect, and adds most to general intelligence. The commonest minds can grasp it, and the most highly cultured can use it as a stepping-stone to what most delights them. The finest educators see in this system so much of hope and promise, not only to those who are now studying but to those who come after them, that they give it their hearty co-operation and support, giving the benefits of their researches in the form of lectures and printed primers, which can be purchased for a song.

"The plan of taking a few minutes of each day—minutes which in many instances are thrown away—breaks the monotony of the routine of daily labor, and gives the student the happiness of having something to think about, which lifts the soul above drudgery. Especially is it a blessing to women who are overtaxed by household cares, as it takes the mind for a little season entirely away from the "three meals a day," and the eternal round of dish-washing and bed-making, and the still more wearing anxieties of the mother. The entire change of thought rests the weary brain and nerves instead of adding to its weariness. Some conscientious souls are afraid that if their minds should, for forty minutes per day, be off duty, something would be neglected; some link in the chain which binds them to household duties would be broken. In many instances this would prove the greatest blessing to the whole household. It would bring about a better adjustment of labor. What strength was not expended upon rendering the kitchen floor clean enough to "eat off from," would be applied where it would greatly add to the well-being of husband and children. They would greatly prefer a smiling, intelligent face, with conversation instructive to the little ones, and interesting to the older ones, from mother's side of the table. But this is all a mistake about neglecting duties. Duties can never conflict. One duty is always nearest, and that duty is always to be done first; and it has been proved in thousands of instances, that the housewife who has ambition, intelligence, and conscience enough to be the queen of the house, creating its spirit, directing its interests, charming its inmates, and gracing it with a presence which is felt by all as its chief blessing, has also ambition and

conscience enough to be true always to the nearest duty. I can find nothing approaching the Chautauqua course of study as an aid to mothers and housekeepers in creating the ideal home, which is to all its members a haven both of rest and inspiration.

"Because it is such a help, I would, as one of the C. L. S. C., invite all who can, to try it and become one of the class. Some hesitate to join because company and sickness in the family would interrupt. Here is manifest one of the advantages of the Chautauqua system of neighborhood circles. Company and sickness would interrupt any course of study, and in nine cases out of ten it would never be resumed. The members of the neighborhood circle carry on the work, and the one who is behind reaps the benefit of what has been done by others."

NEWS RECORD.

OUR record closes on December 29th.

Foreign and Domestic.

Congress has organized, and the President's message has been submitted. The three paragraphs in this message which will be most likely to provoke debate are those on the Southern Question, on Civil Service Reform, and on Finance. He devotes considerable space to education, and says that the surest guarantee of the rights of citizenship is to be found in universal education, and urges national appropriations in favor of education in the States whose means are now totally inadequate for the demands laid upon them.

The circle of anarchy is still widening in Ireland, aided by the natural growth of excited feeling, and stimulated by the systematic agitation of the Land League. Mr. Parnell's application for a postponement of the Government's case against him has been denied by Chief Justice May in very explicit and outspoken language. The Justice declares that the country has been in a state of anarchy for months. "The law has been openly defied; a large portion of the community, urged by the members of the Land League, have practiced a system of fraudulent dishonesty in refusing to meet their just debts; it has been and is impossible to execute the process of the law, or to issue the Queen's writs. The country is in a state of terror, tyrannized over by an unauthorized conspiracy." Under these circumstances, he holds that the trials must proceed. The Ministry are naturally desirous of deferring aggressive measures un-

til the meeting of Parliament, which is to be called together January 6th.

Miners who have lately returned from Alaska to San Francisco report finding numerous gold deposits and rich placers.

A meeting of several thousand persons was held in Berlin on the 19th, at which resolutions were passed in favor of the suppression of the liberty of the Jews; to return no Liberal to Parliament who will not promise to vote for such suppression; and to buy nothing from Jewish shops or firms.

According to the terms of the new treaty between Russia and China, the latter will open the whole country to Russian commerce.

The Swiss Confederation has elected Audenvent President, and Dross Vice-President. Audenvent committed suicide two weeks after his election.

The British Admiralty has abolished flogging in the navy.

Justices Strong, Clifford, and Hunt are to withdraw from the Supreme Bench.

The British are about to retire from Candahar.

The Superintendent of Census places the population of the United States and Territories at 50,152,559.

For the first time since the war the Southern States will participate in the inaugural festivities at Washington.

The Chileans had arrived within twenty miles of the Peruvian Capital December 23rd.

George Eliot, the celebrated author, is dead. Her real name until a few weeks ago, when she married a Mr. Cross, was Marian C. Evans.

John Kelly, the Tammany Chief, well-known as the "boss" politician of New York City, has been deposed from the City Controllorship, a post he has occupied for nine years.

Personal.

A grandson of Henry Clay, bearing the same illustrious name, who was one of the Howgate Expedition, spends the winter at Rittenbank, Greenland.

Baron Rothschild, the head of the French branch of the family, is usually at the bank before the clerks are. His wife wears but little jewelry, and his daughter Bettina has passed a successful examination as a teacher.

Frau Laves, the Charlotte of *Werther*, has just died at a great age, leaving a grandson, George Laves, who has already some fame as a historical painter.

It is said that the reading of *Uncle Tom's Cabin* fired the heart of the Emperor of Russia with the resolve to destroy slavery and serfdom in his empire.

Professor Watson, of the University of Wisconsin, was engaged just before his death in the experiment of gazing at the stars down cellar, on the principle that stars can be seen at noonday from the bottom of a deep well. He built his new observatory over a cellar twenty feet deep, into which the light of the heavenly bodies was to be thrown down a large tube by powerful reflectors on a neighboring hill.

General Sir Frederick Roberts, the hero of Candahar, who relieved the beleaguered garrison in Afghanistan, is to be rewarded by a gift of one hundred and twenty-five thousand dollars. Premier Gladstone will move Parliament to that effect.

Hon. George P. Marsh, United States Minister to Italy, intends to resign his position in the spring. Mr. Marsh is seventy-nine years old.

Senator Thurman, it is said, is to reside permanently in Washington, and will practice at the bar of the Supreme Court of the United States.

General Reffye, inventor of the mitrail-leuse, which is used with such deadly effect in modern warfare, died, a short time since, in Paris.

In a letter to the school-children of Cincinnati, who propose to give him a day of commemoration, Dr. Holmes writes that he trusts that they will not remember him by the green fruit of his early years, but by such verses as the "Promise," and the "Chambered Nautilus," in which case he will think their memories a better monument than any bronze or marble.

Lucretia (Coffin) Mott, who died recently, was born in Nantucket, Jan. 3rd, 1793. She took charge of a large school in Philadelphia in 1817. When in her 26th year she became a minister in the Society of Friends.

Miss Morse, the daughter of the inventor of the telegraph, is about to be married to Mr. Rummel, the pianist.

Professor Nordenskjöld was recently elected a member of the Swedish Legislature.

Lord Beaconsfield's new novel, "Endymion," is out, and has met with an enormous sale, both in this country and in England. Its chief merit is, that it is political, and deals with the public questions and public men of the last fifty years, and gives pen portraits, more or less accurate, of the latter. Another story from the same author is announced for an early day.

Educational.

Dr. B. Joy Jeffries, in testing the children in the Boston schools in relation to color-blindness, finds the boys much more deficient than the girls.

The aggregate enrollment of pupils in the public schools of New York City last month was 130,345, and there were 119,812 pupils in daily attendance.

The Postmaster-General's report shows that in 1879, 2,996,513 letters and parcels were sent to the dead-letter office in Washington. More than one and one-half million dollars were contained in these. Children ought to be taught in school how to date, write, fold, and direct letters properly. In view of the official record in regard to the number of letters sent to the dead-letter office, do n't you think so too? Let us be practical in our teaching.

The Great Mohammedan University at Cairo, Egypt, has 10,000 students, and 300 professors.

Cambridge College, England, has decided to drop Greek from the list of required studies.

President Eliot, of Harvard College, has sent confidential letters to the parents of all the students, requesting information as to whether or not the students have been ac-

customed to attend prayers at home, and asking the parents' opinion on the subject of compulsory attendance at morning chapel. It is expected that if the answers to these interrogatories are favorable, attendance at prayers will hereafter be voluntary.

An exchange says that most of the premiums for superiority in classical studies preparatory for Bowdoin University were given to students from high schools, and not to those from academies.

Edwin H. Fay has succeeded R. M. Lusher as State Superintendent of Public Instruction in Louisiana.

Mrs. Louise Pollock and Miss Susie Pollock are principals of the Washington (D. C.) Normal Kindergarten Institute for the Training of Teachers. The former has studied the Kindergarten system for seventeen years, and translated and written many treatises on the subject; and the latter is a graduate of the Kindergarten Normal Institute, Berlin, Prussia, class of 1869.

Jules Ferry, Minister of Public Instruction in France, has caused Herbert Spencer's work on Education to be translated for free distribution in the Public Schools of France.

G. B. Hyde, a member of the Boston School Board, has given thirty-two reasons why corporal punishment should not be abolished in the public schools.

Harvard "Annex" girls, who passed the entrance examinations, (identical with the freshman examinations for Harvard) number 42. Ten of them take the course pursued by the classes in college, excepting chemistry, for which there is wanting laboratory accommodation. They are taught by seven professors, four assistant professors, and twelve instructors—all of the Harvard corps. For information, address Arthur Gilman, Cambridge, Mass.

Edwin P. Seaver has been elected to the superintendency of the Boston schools. He is, in educational management, conservative yet liberal. He graduated with credit from the Bridgewater Normal and from Harvard College; inspected many of the first schools of Europe; then took the post of master in the English High School, Boston. He was not, however, elected without considerable opposition.

We reiterate a former remark—John D. Philbrick is the man for the place, not because there are no other first-class men in Boston, but because for many years he filled the superintendency with advantage not only to Boston, but to the whole country. His removal was uncalled for, and we predict that school matters in the "hub" will remain unsettled until he resumes the official toga.

A recent paper issued by the Bureau of Education describes the system of vacation colonies for sickly school-children, which has been advocated in this country, and has been in operation for some time in Switzerland and Germany. The first step toward the establishment of vacation colonies was made by Pastor Bion, of Zurich, in 1876, who, being struck by the sickly looks of many pupils, decided to give them relief; and, after collecting the necessary funds, sent 34 boys and 30 girls, in charge of competent teachers, into the country. The children showed a marked improvement in health on their return, and the success of the venture led to its adoption by the cities of Frankfort, Dresden, Stuttgart, and finally Vienna. The expense attending the enterprise is a trifle over \$13 for every child received. This year Berlin joined the movement, the local committees being headed by the Minister of Education, Dr. Falk.

The Board of Normal Regents of Wisconsin, adopted a resolution at its recent session, in accordance with which a kindergarten will be established in connection with the Normal School at Winona, as a part of the model school, tuition fees of which shall not exceed \$40 per annum. Mrs. Sarah C. Eccleston was employed as teacher of this department, and also as critic teacher, at a salary of \$800 per annum. The other normal schools will have a similar department established as soon as it can be done upon similar conditions.

Buffalo public-school teachers are proposing to establish in the schools of the city juvenile societies for the protection of animals. A good thing for the children.

The first school for idiots was organized by Dr. Edward Seguin, who lately died in New York. There are now seventy-five similar institutions in civilized countries.

General Notes.

It is rumored that the feelings of the young ladies in Boston have been "aroused" by the demand of the young men for wives who are good cooks. Some of them have formed a club, pledging themselves not to marry a man who cannot sew on buttons, darn his own stockings, black his own boots, and take care of himself in every way. Another club will be composed of girls pledged not to marry any man who has not learned how to take care of a furnace and a range, how to drive nails and mend water-pipes, and who is not able to shovel snow well.

Sergeant O'Keefe, of the Signal Service, has made the discovery that Pike's Peak is a volcano.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

At a meeting of the Board held during the last week in December, a new schedule of salaries was reported by the Committee on salaries, and adopted by the Board, for the year 1881. While on the whole this schedule is equitable and makes a general advance in the salaries of the teachers of the department, we regret some of the changes made, and especially that the rise in the salaries of primary teachers is not commensurate with the importance of their work. This Board evidently still fails to see that the primary school is the corner-stone of the American free-school system. The work in the lowest grades of that school requires the highest order of teaching ability, the most thorough training, and the noblest natures. The Board, while it wisely recognizes the value of experience, fixed the maximum salary for all primary grades at sixty dollars per month. This is certainly not an adequate compensation. The high-school principals and some of the special teachers were cut down more severely than can be justified by a comparison of their salaries with those holding corresponding positions in Eastern high schools. One case in particular, though this *must* have been an unintentional oversight, was especially hard. We refer to the case of the teacher of the normal class in the Girls' High School. The salary was fixed, with amount allowed for experience, at \$135 per month. The salary for corresponding positions in the Boys' High School, and of special teachers of the same rank in the Girls' High school is \$160 per month. As the normal class is taught by Mrs. Mary W. Kincaid, a lady, who for thorough culture and the highest order of ability has no superior in America, we can but believe that it was by some unintentional inadvertence that so apparent a discrimination was made.

A report was made by a committee of the Board recommending the dismissal of cer-

tain married women from the department. This step is understood to be introductory to the dismissal of all married women. As no action was taken on the report we defer comment until our next issue.

The best news from San Francisco this month, hardly excepting the advance in salaries, is the resignation of Directors Stone and Ewing. These gentlemen served the city in the Board of Education just one year. During this period every measure proposed and carried out by them for the schools was defended or excused by one statement, *i. e.*, they were thoroughly conscientious and acted with the best intentions for the good of the system. They forgot (perhaps they never heard of) the place paved with good intentions. The result was that the department was converted into a miniature pandemonium for the year 1880. Teachers were in constant terror, had no heart in their work, and went through their school duties in a perfunctory manner. The political career of Messrs. Stone and Ewing (which may be considered as ended) shows that even unquestioned integrity, when combined with dense ignorance, is of no avail in the public service, and may be productive of the greatest mischief.

At the last election Mr. Isidor Danielwitz was elected school director in place of Mr. Galloway, deceased. Mr. E. E. Harvey had previously been appointed by Supt. Taylor to fill the vacancy. On receiving his certificate of election, Mr. Danielwitz claimed his seat, but was confronted with the statement that no vacancy existed. He has brought suit to decide the matter.

We believe that as Mr. Danielwitz was fairly elected by the people, and that as there are yet two vacancies in the Board, he should be admitted. There will still be two vacancies in the Board, and Mr. Harvey, who is making a valuable member, should have one.

It seems to us that it is the duty of the

Superintendent and Board to carry out the will of the people, and they certainly expressed it plainly enough at the last election.

ALAMEDA COUNTY.

The Haywards school will reopen under the supervision of W. H. Galbraith. Mr. Galbraith has been connected with the school as principal for the past two years. During his incumbency the progress of the school has been very rapid and thorough. He has been assisted by a corps of teachers fully equal to the requirements of their situations. Such harmony of purpose as has been manifested by the teachers could not but beget a corresponding enthusiasm on the part of the pupils. The result has been all that could be desired.

The Mt. Eden school will continue to flourish under the guidance of Mr. Frick. Rumor says that Miss Jessie Williams will shortly close her connection with the school to form a more desirable one. Miss Williams, during an incumbency of about five years, has won golden opinions by her industry and energy, as also by her exceeding amiability, as every principal under whom she has taught can testify.

The Fruit Vale school has lost in Mr. Redway an able and conscientious teacher. Mr. Redway goes to Los Angeles, influenced by considerations of health. He will be succeeded by Prof. Hamilton.

The schools generally throughout the county will remain under the same teachers.

Alameda County is happy in the possession of a superintendent like Mr. Gilson. To his recognized ability, untiring energy, unswerving patience, and never varying courtesy, must be largely attributed the success of the schools of this county.

Prof. J. W. McClymonds, formerly of Sonoma, has been principal of the San Leandro school during the past six months. He has been highly successful, and great interest has been manifested in the entire school, not by pupils only, but by the whole community.

W. F. Kent, formerly of Santa Cruz County, has been principal of the Liver-

more school during the past term. The school reopens after the winter vacation, on the 3rd.

CALAVERAS COUNTY.

A very interesting session of the teachers of this county in Institute was held the last week in November. Supt. Peachy presided; Wm. Nellis acted as secretary, and Miss Eunice Gallagher as assistant secretary. State Superintendent Campbell was present, and delivered an interesting address on "School Work." Mr. Floyd delivered a valuable address on "Arithmetic"; Wm. Nellis and L. B. Chaloner spoke on "Spelling"; Ex-Superintendent C. R. Beal, on "Course of Study"; Miss M. G. Salado, on "Primary Reading";

Mr. Peachy, the county superintendent, though his salary has not been determined on by the Board of Supervisors, has shown great activity and interest in the schools of his county. The County Board of Education is well constituted, Ex-Superintendent C. R. Beal being president.

COLUSA COUNTY.

Considering the storm which raged through all parts of the State, the Institute held in Colusa December 18th, 19th, 20th was a decided success. Only about two-thirds of the teachers of the county could attend. Those present manifested great interest in the subjects discussed, which included the greater part of the school course. The editor of the JOURNAL was with the teachers, and spoke on various topics as they came up. Active part was taken also by Messrs. Houchins, Reardon, Hayman, Myrick, and Mrs. Drake, Misses Estilya, and Macindon.

Evening lectures on "Scientific Progress in the Nineteenth Century" and "Some Favorite Authors and their Books" were delivered by Mr. Lyser. Rev. T. A. Atkinson, pastor of the M. E. Church, was present, and took part in some of the proceedings of the Institute. Supt. Houchins, who has been very ill this summer and autumn, has recovered his health, and promises an active visiting tour of his schools. Mr. Houchins has lived and taught in this county about twenty years, many of the teachers being former pupils.

CONTRA COSTA COUNTY.

With the past term Mr. Dixon closed his connection with the San Pablo school. He has served in the capacity of principal for the past five years in such a manner as to give unbounded satisfaction to his patrons. He relinquishes the profession of teaching to devote himself to that of law. His many friends will rejoice in the success which his ability and industry will surely secure for him.

Clarence M. White ceased his connection with the Pinole school December 3rd. He at present engaged in the JOURNAL office.

Mr. Clement has done excellent work in the Martinez school, as is attested by the fact that his salary has been raised \$20 per month.

The policy of requiring the superintendent to devote his entire attention and time to the schools has been very clearly demonstrated by the marked impetus given to the advancement of the schools of this county. Mr. Bailey has fulfilled the duties of his office in a manner and to a degree creditable to himself and satisfactory to his constituents. He has, by his intercourse with teachers and visits to schools, made himself thoroughly familiar with the wants, failings, and excellencies of the various schools under his charge. At no time in the history of the county has the standard of both schools and teachers stood so high as at present. As Mr. Bailey has contributed largely in securing the present status, due praise should be accorded him.

ELDORADO COUNTY.

The seal of the County Board of Education of Eldorado is the most unique we have ever seen. It is the diagram of the 47th problem of Euclid: *Pons Asinorum*. Rather significant to applicants for teachers' certificates, it appears to us.

FRESNO COUNTY.

A course of six lectures will be delivered at Central Colony school-house, commencing January 6th, by Miss M. F. Austin. The subject will be "Physiology." The acknowledged success of the lady as a teacher, and her scholastic attainments, furnish sufficient guarantee of the excellence of the

lectures announced. The subject is one of vital importance to every man, woman, and child in the vicinity. The lectures will be illustrated by charts and natural specimens. Thursday night of each week is assigned for each lecture until the course is completed. An admission fee of ten cents will be charged, the proceeds to be devoted to school purposes. Such a worthy object, aside from the probable excellence of the lectures, should bespeak for them a cordial and generous support.

INYO COUNTY.

Independence school closed December 24th for the month. Mr. Brough will teach at Camp Independence during the vacation, and on his return, teach this school for the same length of time.

KERN COUNTY.

The schools of Bakersfield will reopen January 3rd. Mr. E. Rousseau, formerly superintendent of Santa Clara County, has been re-engaged as principal. We predict a successful term.

LOS ANGELES COUNTY.

Mr. W. E. Willmore, the manager of the "American Colony" in Los Angeles County, is an old and experienced teacher, who has taught in Oregon and Washington Territory, and more recently in this county. He attended the late meeting of the State Association of Teachers in San Francisco, and visited the JOURNAL office. He is enthusiastic about the "American Colony"—says he is ready to make special terms with teachers who wish to lay by enough for a home in the county of oranges.

MONTEREY COUNTY.

The Peach-tree school closed December 3rd. For the past term it has been under the management of Mr. C. F. Ruffell, who is reputed to be a most excellent teacher. Mr. Ruffell is passing the vacation with friends in Salinas City.

Monterey City schools closed December 3rd, after a term of marked success. The schools have been under the efficient supervision of Mr. Ed. Graves, who will linger in the grateful remembrance of patrons and children by reason of his excellent work

in the school during his incumbency. He will return to the East, where he will take up a permanent residence. We are credibly informed that Mr. J. A. Rilev of Natividad will succeed him in the capacity of principal.

A. L. Luce has been appointed a trustee of Monterey schools, vice Captain Jocelyn, resigned.

There were twenty applicants at the recent examination of teachers. Of these, the following succeeded in obtaining certificates: Miss Annie Downey, Miss Emma Nickell, Miss Ada Grimes, Miss Rachel Miller, and Miss Ida Swaunk.

Miss Eulalia Day, formerly of Monterey, is now a teacher in one of the San Francisco schools. Her sister, Miss Mariana, is attending the State Normal School.

NAPA COUNTY.

The schools of Yountville closed December 24th. Mr. Chapman has endeared himself to the patrons and children of the school by his judicious management, and is conceded to be the right man in the right place.

PLACER COUNTY.

The Rockland Grammar School closed December 3rd, to reopen under the supervision of Mr. Coban, late of Newcastle.

The Iowa Hill school closed December 24th. A vacation of two months is necessitated by a trip of Mr. Drew to visit his parents in Illinois. Upon his return the school will be again opened under the administration of this excellent teacher.

SACRAMENTO COUNTY.

Thirty-two applicants appeared before the Board of Education at the last examination. The standard prescribed for first grade is 85 per cent. of first grade and 72 per cent. of second grade examination work. The following were awarded certificates:

First grade.—Emma A. Hughes, Lena Colton, Emily F. Ives, Mattie Perkins, Lafayette Lorillard, William McNaut.

Second Grade.—Mary McKay, Nellie E. Ives, Ettie W. Briggs, Isabel Haskell.

SAN BENITO COUNTY.

The public schools of San Juan closed

December 3rd. The term has been an unusually profitable one. The commencement of the next term is deferred three months, owing to a scarcity of funds.

Miss Ida Rhinehart has been re-engaged to teach the "young idea how to shoot" for the spring term in Union district, as has also Miss Anna Thompson at Bitterwater. Jno. Patterson is at Santa Ana, S. A. Chambers at Jefferson, Miss L. Schemel at Plateau, Miss Mattie Chappell at Lone Tree, J. B. Hickman at Carnadero; J. N. Thompson, the efficient County Superintendent, is at Pacheco; A. Martin at San Benito, W. H. Housh, Miss Frank M. Housh, and Miss M. J. Pierpont at San Juan. The same corps as last term will have charge of the Hollister schools.

The Board of Education this week granted first grade certificates to Misses Lula L. Moore and Sue D. Moore, on first grade State certificates. The first grade certificate of Miss Flora Conover was also renewed.

SAN BERNARDINO COUNTY.

The public schools of Colton will commence January 3rd.

SAN DIEGO COUNTY.

The Institute held in this county the first week in December was from every point of view a marked success. In fact, under Superintendent George N. Hitchcock, great progress has been made in educational matters; the schools have increased in efficiency, and a general interest has been awakened in the community in their improvement. While the JOURNAL has always strongly advocated teachers for the superintendency, we feel that an exception may sometimes be safely made, as in the case of Mr. Hitchcock. This gentleman is a lawyer, but has thoroughly familiarized himself with the details of school management, and is imbued with a deep regard for the cause of popular education. Though he has been but a year in office, yet the effects of his conscientious, capable supervision are already visible in the greatly increased efficiency of the teachers of the county.

At this recent Institute Ex-Superintendent E. S. Carr delivered several lectures

Essays were read by Miss Lavena Clark, on "Orthography"; Miss Della Hill, on "School Libraries"; C. A. Menefee, on "Natural Science in Primary Schools"; S. E. Ward, on "Language"; R. W. Bailey, on "Rewards and Merits"; Miss F. A. Brown, on "The Future of California from an Educational Stand-point," and Miss Hoagland, on "Composition."

San Diego has miserable school accommodations, so the San Diego *Union* makes the following suggestion:

"Let the city authorities set apart for public school purposes a sufficient site in that corner of the Park Reservation near the McDonald residence. The location is the finest in the city; it is central; it commands a splendid view, and it is sufficiently removed from the business thoroughfares, while easy of access to the children. The land will cost nothing. A sufficient tract should be set apart for ample grounds as well as for building sites. These should be properly inclosed and beautified. Our public school location could and should be made the most attractive spot in the city. At present the court-house and jail have fine accommodations and handsome grounds, while our public schools are dingy sheds on a sand-bank. Let us reform this."

SAN MATEO COUNTY.

Alpine district contemplates the erection of a new school building. The rapid growth of the district from a mere handful to a census of fifty school children, renders the present edifice inadequate to the necessities of the school.

SANTA CRUZ COUNTY.

"Miss Alma Galbraith, lately assistant in our High School, has resigned for a position in Oakland. Her departure is a loss to our school, as she is an exceptionally gifted scholar, and successful teacher."—*Santa Cruz Sentinel*.

Santa Cruz schools closed December 17th. The expense of the term just ended exceeds \$7000. Mr. E. C. Newell is retained as vice-principal. We congratulate the people of Santa Cruz on the re-engagement of so efficient a teacher. During the past term the teachers have devoted a half day of each month to a conference meeting.

The trustees, at a recent meeting, vetoed this disposition of school hours, deciding that a school month consists of twenty days of six hours each.

The graduating exercises of the Santa Cruz High School were held at the close of the fall term as a matter of convenience. The essays of the graduates gave indications of well-trained minds and careful thought. It is a credit to any town of the size of Santa Cruz to have a high school as efficient as this one has been under the charge of Prof. W. W. Anderson. The tidal wave of ignorance has been felt in this city as in other places, and efforts are being made to cripple, if not to destroy, the high school. By so doing, the "penny-wise and pound-foolish" elements of society are taking just the course that will most readily render Santa Cruz an undesirable place of residence, cause depreciation in property values, and drive the most desirable class of citizens to more favored places of residence. Let us hope that Santa Cruz may choose the path of wisdom, and that the public spirit and virtues of her people may some day be of as fair repute as her beautiful scenery and delightful climate.

SHASTA COUNTY.

The sixth annual session of the Shasta County Teachers' Institute commenced in Shasta November 15th, at 10 A. M. Twenty-seven teachers were present. The exercises were varied and interesting; some time each day being spent in a discussion of the various methods of teaching the common branches in our schools, all present participating. Mr. Judson Regal presented in a very happy and beautiful manner his method of teaching singing to a class, showing himself to be a thorough master of the subject. Able papers were contributed by Mesdames Schaggs, Bell, Veeder, and Webb, Miss May Matlock, and Messrs. Leighton and Walker. Select readings by Misses Smith, Harrow, and Cadwell proved quite an interesting feature of the Institutes. The session throughout was enlivened by music beautifully rendered by Misses Kountz, Zorn, and Grotefend, and Messrs. Regal and Walker. Hon. F. M. Campbell, who had been announced to lecture Mon-

day afternoon and evening, was, greatly to the regret of all present, unavoidably detained elsewhere. The teachers voted to hold the next Institute at Redding. Adjourned after a harmonious session of three days.

SOLANO COUNTY.

The Dixon High School closed Friday, December 17th. It will reopen January 3rd with an entire new corps of teachers. Mr. Simmons, on his retirement to another field of labor, alluded in a letter to the *Dixon Tribune* to the inception and progress of the school. He paid a high compliment to the people of Dixon, and asked for his successor the same generous support which had been accorded to him.

The closing exercises of the Young Ladies' Seminary, Benicia, took place Friday morning, December 17th. The programme consisted of declamations, music (vocal and instrumental), and an essay on "Newspapers," by Miss Sedgeley, the only graduate.

The closing exercises of St. Augustine College took place Thursday, the 16th ult., at 10 o'clock A. M. Medals and honors for the term were awarded. A competitive military drill formed the next feature of the programme. Maj. H. E. Hackett officiated as judge. A gold medal was bestowed upon Frank McAllister as the best drilled cadet.

SONOMA COUNTY.

H. E. Footman, for many years a successful teacher in Monterey County, is now engaged at Bodega. We noticed his marriage on the 22nd to Miss Nettie Barr, the lovely and accomplished niece of the Hon. J. G. Presley, Superior Judge of Sonoma County. We feel confident that the acquisition of a young and beautiful wife will be no bar to his future success.

At the recent examination of teachers of this county, the following candidates were awarded certificates:

First grade.—Mr. J. A. Eveleth, Mr. B. J. Bether, Mr. A. J. Barham, Mr. Wilbur Noffsinger, Mr. B. A. Morton, Miss Mary E. Casey, Miss Eda P. Holton, Miss Georgie Reynolds, Mr. Eugene Byrnes, Miss Erminia Maddocks, Miss Carrie Brown, Miss

Alice Munday, Miss Nellie L. Denman, and Miss Ella Hope.

Second grade.—Mr. H. O. Brink, Mr. J. R. Shelton, Miss Louisa Farmer, Miss Ruth McClellan, Miss Nellie Dinwiddie, Miss Polly Boettcher, Miss Mary Nunn, Miss Alice Blair, and Miss Emilie C. Parker.

TEHAMA COUNTY.

Supt. Myron Yager is one of the "live" superintendents of the State. This is known at home as well as abroad, as is evidenced by the fact that his supervisors have raised his salary to \$1,100 a year and traveling expenses. The Institute held at Red Bluff the first week of December was well attended, and not only interesting, but participated in with enthusiasm by the teachers of the county. State Superintendent Campbell was present one day and delivered an evening lecture on "A State Course of study." Prof. Norton of the Normal School was also present, and spoke on different topics. In the evening he lectured on "Physical Geography" and "The End of the World." Among the teachers of the county the following took active part: James Conroy, on "History of the United States"; O. E. Graves, Prof. Gans, on "Geography"; H. Fowler, on "Mental Arithmetic"; H. H. Banks, on "Written Arithmetic"; Miss Mary Batten, on "Object Lessons"; Prof. McCoy, on "The Profession of Teaching," and Prof. A. W. Gale, on "Physical Geography." The teachers of the county took part quite generally in discussing the papers presented.

NEVADA.

The expenses of the Storey County schools for the year 1880 were \$62,000. This is a reduction of some \$14,000.

The average number of children to the teacher in Gold Hill is 68; in Virginia, 61.

Adolph Sutro, of Sutro Tunnel fame, sent up seventy-five books from San Francisco to be distributed among the children of the Sutro schools for Christmas presents. The books were graded to the age and intelligence of the children, some of the older ones receiving handsomely bound volumes of Shakespeare, Byron, Milton, etc.

Prof. W. W. Booher, principal of the Sutro schools, is County Superintendent elect of Storey County.

C. S. Young, the retiring County Superintendent of Storey County, made 833 visits to the schools in one year. What superintendent has done better?

Miss Ida Lynch, of the Gold Hill Schools, probably has more children than any one teacher in the State. There was an enroll-

ment of 112 during October. Most of these, however, come only half a day.

Examinations for promotion are made semi-annually in Virginia.

The Storey County Teachers' Association at a recent meeting appointed a committee to draft resolutions asking the coming Legislature to make needed changes in the school law.

BOOK NOTICES.

BOTANY FOR HIGH SCHOOLS AND COLLEGES. By Charles E. Bessey, Professor of Botany in the Iowa Agricultural College. 610 pp. large 12mo. 573 illustrations. New York: Henry Holt & Co., 1880. Price \$2.75.

The inborn desire to know the names of things naturally leads the student to take up first that branch of botany devoted to the classification and naming of plants; hence, the popular works on botany are systematic manuals, such as Gray's and Wood's. A few who study botany because it is in the course of study prescribed by the academy or college which they attend, are satisfied with the acquisition of Latin names for common plants, thus cheaply filling the popular ideal of a botanist as one who knows big names for little weeds. With such students, the scientific difference between a carrot and a radish is the difference between *Pastanica* and *Rahpanus*. Real seekers after knowledge, however, soon wish to know more of the structure of plants than is necessary for determining names. Gray's new Text-book of Structural Botany will help the observer to see all that the unassisted eye can discover; but he who would know the intimate structure of plants, and the secret of their development, must, with a microscope, explore their tissues, and observe how protoplasm builds them, cell upon cell. Hitherto there has been no good work in the English language upon Physiological Botany, except the recent translations from the German of Sachs' *Lehrbuch*,

and the smaller work of Prantl. A careful examination of Prof. Bessey's new work satisfies us that he has successfully met the want, now beginning to be keenly felt, of a botany devoted to the anatomy and physiology of plants. With a microscope and this book the student can, without other aid, learn all that is important about the structure and development of plants. The constant suggestions concerning how to proceed in the work of dissection, etc., are invaluable to those who work without a teacher. An admirable index lessens the labor of looking up any topic. The illustrations are mainly drawn from Sachs' work and other sources, but are none the less good on that account.

SPIRITUAL SONGS FOR THE SUNDAY SCHOOL. By Rev. Chas. S. Robinson, D. D. New York: Charles Scribner's Sons. 192 pp. Price, retail, 50 cts.

This is a beautiful little volume abundant in some of the choicest sacred music of every variety, from "A Mighty Fortress is Our God," to "The Sweet Story of Old"; everything, however, being the best of its kind.

Turning the pages leisurely, one finds some of the grandest English and German chorals intermingled with choice tunes from Emerson, Bassford, Sherwin, Palmer, Seward, and a dozen other reputable American authors. The melodies of Dykes, Monk, Sullivan, and Barney associate lovingly with those less ornate which have long been standards in the church. There are twenty or

more most admirable and singable "arrangements" from Mendelssohn, Mozart, Handel, Rossini, Concone, Mercadante, Oberthur, Arthur Sullivan, and other classical composers, some of which are entirely new in their associations, and none of them too difficult for the average school.

We can heartily recommend this book as the best of its kind issued from the press since many years.

ELEMENTARY LESSONS IN ENGLISH. Part I. How to Speak and Write Correctly. Teachers' Edition. By Mrs. N. L. Knox, Boston: Ginn & Heath. Oakland: F. B. Ginn. 278 pp. Mailing price 80 cts. Introduction price 56 cts.

While most modern teachers are agreed in rejecting technical grammar teaching as the basis for instruction in language, few understand thoroughly the kind and degree of language lessons to be substituted therefor. In fact, while several new text-books on grammar include much of language instruction, none with which we are familiar have elaborated a complete, systematic, and logical system of language teaching except this series, the "Teachers' Guide," which is before us. This series, both in its two elementary and in the one higher book—all prepared by Prof. W. D. Whitney of Yale College and Mrs. N. L. Knox of Boston—keep steadily in view the exclusive object of grammar teaching, *i. e.*, the correct *use* of language.

The Teachers' Edition contains the text of the children's book entire, and, in addition, plans for developing the lessons of the text; observation lessons; dictation and text exercises; questions for oral and written reviews; material for composition exercises; plans for conducting picture lessons, etc., etc.

A preliminary chapter, "The Teachers' Guide," includes a discussion of the Pestalozzian Principles of Education and Instruction; of the Art of Questioning and the Laws of Questioning; of methods of correcting oral and written mistakes; of Oral Lessons, how to prepare them and how to give them. It embraces also material and plans for Oral Lessons in Language for the first, second, third, and fourth years in school.

The pupil's book is designed to *supplement*, not to supplant, the work of the teacher. The two books combine the advantages of both oral and text-book methods of instruction, and seek to obviate the disadvantages of either method used alone. The pupil is led by the teacher to discover the fact or deduce the rule which the book records. There are no formal answers to the questions in the book, and no recitations by rote are required. The substance of what is taught in the oral lessons is preserved by the text for reference and review, so that the oral instruction need not be repeated.

The exercises in the pupil's book place before each child, in clear type, at a proper distance from the eye, a large amount of work necessarily put upon the blackboard in an oral course. The teacher is thus exempted from preparing and writing and re-writing upon the board a great variety of exercises, and the class escapes the threefold discomfort of inhaling crayon dust, straining the eyes to see what is written upon the board, and working under a nervous pressure in order to complete the task in a given time. The script type in the chapter on Letter Writing is a better model for the class than the penmanship of the average teacher.

LITERARY NOTES.

The English edition of *Harper's Magazine* begins with 15,000 copies, orders for that number of the December issue having been received. The English edition differs from the American only in respect to the editorial departments, which treat of subjects of particular interest to English readers. As it is the custom of the English magazines to appear only five days in advance of the date, this magazine will be issued about ten days later in England than here.

Among the articles in the January *Harper* are: The English Lakes and Their Genii, by M. D. Conway; Old-time Life in a Quaker Town, by Howard Pyle; Anne, (a novel) by Constance Fenimore Woolson; and Two Sonnets, by James Russell Lowell.

The notable articles in the January-February *Education* are: Four Centuries of Scotch Education, by John Russell; The Function of the Thinker in Education, by H. H. Morgan, St. Louis; The Best Method of Examining and Certifying Teachers, by H. E. Shepherd, Baltimore; The Lancastrian

System, by E. O. Vaile, Chicago; and What is the True Ideal of the Public School? by John D. Philbrick, Boston.

The *Educational Weekly* of Chicago has, we see, changed hands; Mr. S. R. Winchell, the founder and proprietor for eight years, selling to J. F. Wagoner, the owner of the *Western Educational Journal*. We regret Mr. Winchell's retirement from the field of educational journalism. 'T is true, it is a harder road to travel than Jordan itself; but we supposed that, with the immense field before the *Weekly*, with the sterling merit and progressive character of its contributions, that it was a paying institution. We fear that the ill-fortune and hard-usage, of which teachers so generally complain, is but too richly deserved by them. If all the teachers of the wide West cannot support one strong weekly, as well as have a dozen prosperous monthlies, they are not entitled to higher salaries than they get; and what is more, they will never get them.

The January issue of *St. Nicholas*, "the New-Year's number," will be published on Tuesday, December 28th, giving the young people time to forget a little the glories of "the wonderful Christmas number." Among the contents are several capital things which were crowded out of December. "Bright Eyes," the young Indian girl, makes her first contribution to literature in a charming story of Indian child-life. There is an account of "The Children's Fan Brigade," another of the novel entertainments for children's festivals which have been suggested in the pages of *St. Nicholas*; "Every Boy His Own Ice-boat," describing a splendid new sport for all skaters; the first of Mrs. Clara Erskine Clement's "Stories of Art and Artists," which are to be one of the special features of *St. Nicholas* during the coming year; one of Frank R. Stockton's funniest fairy stories; a poem by H. H. Boyesen; pictures grave and gay, continuations of the serials, etc., etc. The issue rivals the Christmas number in good things.

The January *Atlantic* begins a new volume with a number of great and varied excellence. The first chapters of Miss Phelps' serial story, "Friends: A Duet," are so vigorous and interesting that her readers will be impatient for the next installment. Mr. Aldrich contributes a most entertaining paper on "Smith." Henry James' "Portrait of a Lady" needs no commendation to the multitude who follow his stories. John Fiske has an article on "Sociology and Hero-Worship." Miss Harriet W. Preston contributes a delightful literary-historical essay on "A Symposium of Sixty Years Ago." William M. Rossetti begins his series of articles on "The Wives of Poets," with glimpses of the wives of Euripides, Lucretius, Dante, Alfieri, Cervantes, Lope de Vega, and Corneille. Richard Grant White's paper on "Sara Bernhardt" will attract marked attention just now. Mr. Whittier's tender poem in memory of Lydia Maria Child is one of the noblest and most charming poems Mr. Whittier has ever written. Mr. Stedman has a fine poem on "Ye Tombe of ye Poet Chaucer." Other poems, essays, stories, and an unusually varied "Contributors' Club" complete a superb number of this magazine. Now is

the time to subscribe for it. \$4 a year. Houghton Mifflin & Co., Boston.

Lippincott's Magazine is not only reduced in price to \$3 a year, but is greatly improved in the character of its illustrations. Its contributions were always first-class. The January number includes: Gigi's, a Cosmopolitan Art School, by Margaret Bertha Wright, illustrated; Titian's Venus, by George Ferrars, illustrated; An Old New England Seaport, by Charles Burr Todd, illustrated; Lilith, (a story) Part I, illustrated; The Wanderer's Bell, (a poem) by Margaret J. Preston; Out-door Life on the Rhine, by Marriott Pyne; Opposites, by Josephine Pollard; The Called Meeting, (a story) by Jennie Woodville; Madame De Stael, by John Foster Kirk; The Occultation of a Honey-moon, (a story) by Louise Stockton; Race in Brazil, by Frank D. Y. Carpenter; My Mining Investments; Which is Best? by Mary W. Prescott; Monthly Gossip.

Vick's Floral Guide. This work is before us, and those who send 10 cents to James Vick, Rochester, N. Y., for it will be disappointed. Instead of getting a cheap thing, as the price would seem to indicate, they will receive a very handsome work of 112 pages, and perhaps 500 illustrations—not cheap, but elegant illustrations, on the very best of calendered paper, and as a set-off to the whole, a beautiful colored plate that is worth twice the price of the book.

Mrs. Burnett, the author of "That Lass o' Lowrie's," will have a new story in *Scribner's Monthly*, commencing with the February number, the scene of which will be laid in the National Capital. The plot of the story deals considerably with Washington political life. This number will also contain "The Music of Niagara Falls," a composition by a Boston composer, who has attempted to record the sounds of the great waterfall in musical notation.

The Living Age, published by Littell & Co., of Boston, enters upon its thirty-eighth year, of continued publication in 1881. There is no better and more economical way of obtaining the choicest literature and thought of the day than through the columns of this standard weekly magazine. A prospectus for the coming year has been issued by the publishers.

Among the many interesting articles in the January *Scribner*, we can name but three—Eugene Schuyler's Peter the Great as Ruler and Reformer; the third part of Tiger Lily; and Recollections of American Society, by S. W. Oakey.

The contents of *Appletons' Journal* for January are as follows: The Veterans of Yesterday (in three parts—part first), from the French of Erckmann-Chatrian; The Early History of Charles James Fox; Social Life Among the Ancient Greeks; The Influence of Art in Daily Life, (V. Dress) by J. Beavington Atkinson; Political Somnambulism, by Professor J. R. Seeley; Holland and its People; Philosophy at Concord, by Mrs. A. B. Blake; The Earl of Beaconsfield's New Novel; Vers de Société, by A. H. Japp; The Court and Literary Salons of Old Paris. Editor's Table: Eccentricities of Pronunciation—New and Old Art Theories—Ex-Presidents as Senators. Notes for Readers.

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THE PROPER USE OF SCHOOL LIBRARIES.

(A paper read before the California State Association of Teachers.)

BY MRS. KATE B. FISHER,
(Oakland High School.)

IN TWO PARTS—PART ONE.

IN the National Library at Paris are nearly 3,000,000 of volumes; in the British Museum 1,100,000; about 25,000 new volumes appear annually in Christendom, or eight and a half hourly, counting ten hours to the reader's day. The newspapers and periodicals of England and America are estimated at 620,000 issues yearly—*issues*, not *copies*—8,000 of these publications belonging to the United States alone.

The question then, "What books shall we choose?" assumes a magnitude absolutely appalling to one who realizes at all the vast influence exercised upon an individual, or a community, by their habitual reading.

In answer to this question, numbers of wise and helpful publications have appeared from time to time, and their number is still increasing. Such works are "Books and Reading," by Prof. Porter; "Hints for Home Reading," a late issue of Putnam's; "The Best Reading," by the same house; Putnam's "Library Companion," a quarterly issue; "The Literary World," a fortnightly, published in Boston; "Good Literature," by the American Book Exchange, and an ever-increasing number of similar works. Our best es-

sayists devote themselves to the task of guiding the popular taste, and it would seem that with so many helps one need not go very far astray, even in fields so vast.

To the teacher this subject presents itself in a twofold aspect. First, what choice shall he make from the treasures around him, the best to enrich his mind, cultivate his taste, and ennoble his soul?" And then, how shall he lead the young people, with whom he is in daily contact, and who look to him for guidance, to a similar selection?

Let me refer him to the works already mentioned for an answer to the first question, and confine myself in the words I have to say to a few suggestions concerning the second.

What, then, can we do to guide our pupils to a right selection of books? A *right* selection—how much that implies! What knowledge of the psychological laws that govern a child's nature; what sympathetic insight into his tastes and feelings; what patient and persistent study of the individual needs of each member of the little flock! What faculties are to be developed! What impulses checked or encouraged! What right appetites fed! What wrong ones eradicated! For the symmetrical and harmonious development of the pupil's powers, the perceptive faculties must be trained and stimulated; the imagination, which is active, must be supplied with proper objects; the judgment, which is immature; must be cultivated; the reasoning powers, which are dormant, must be aroused; the memory must be schooled to be the ready and faithful servant of the other powers, not overtaxed nor given the chief place; the taste is to be formed on correct principles; the moral nature strengthened and ennobled.

Is this the task we have undertaken? Surely, no rude, unclean, or careless hands should venture upon the sacred task of molding the plastic nature of a child.

Aside from the personality of parents and teacher, which must always be of primary importance in effecting this work, no influence is so potent as that exerted by introducing the child to right paths in the wide fields of literature. These fields he will tread; they are his birthright. It is the teacher's task to lead him away from the rank and noxious weeds, the poison-laden swamps, the pitfalls and snares which threaten his progress, to the higher levels where the ripe fruits of knowledge grow, where the flowers of taste blossom, in paths made sacred by the footsteps of

—"the great of old;

Those dead and sceptred sov'reigns who still rule

Our spirits from their urns."

There are many encouragements to a task of such apparent difficulty.

The mind of a child is active, eager, inquisitive, seizing with avidity on new ideas, if suited to his comprehension; the emotions of his heart, fresh and unworn by hardening contact with the world, are easily led into wholesome channels; his sympathies are readily enlisted on the side of truth and justice. Every boy is born a hero-worshiper. It remains with the teacher to see that he bows to no unworthy shrine.

In a recent article Mr. Whittier has said, in reference to another subject, what seems so apposite in this place, where so large a number are of my own sex, that I am constrained to divert his words from their original design. He says:

"I think the principal mistake of our present civilization is the dwarfing of the sensibilities. After early childhood the cultivation of the sensibility begins to give place to intellectual training, and soon ceases entirely, and the young mind is left to train its own sensibilities. Mental acuteness is the great good—insensibility to feeling the proper condition. But it is necessary to any high spiritual attainment that the sensibilities be pure and delicate. Women are more finely adapted to the development of such influences than men. Disinterested lives are the things needed in society, and women will do most in showing the practicability and value of such lives in all forms of work."

It seems to me that this direction of mind and heart, by means of reading, is to be accomplished by the teacher in two ways. First, *directly*—by personal efforts with the pupils of his charge; and secondly, and no less effectually, *indirectly*—by influencing parents, citizens, and especially trustees of school or town libraries, to choose judiciously the books which are to furnish their own reading, and to supply the never-failing appetite of the present generation.

In the school-room the teacher reigns supreme. If he worthily holds his office, he has the esteem and confidence of his pupils, and they regard him as a living oracle, a sort of walking cyclopedia, a high court of appeal whose *dictum* may not be set aside. Let him magnify his office—let him watch his opportunities. There is not a lesson in our State curriculum, from the multiplication table to the Iliad, that does not give opportunities for suggesting topics for reading and awakening an interest in good books. Especially fruitful, in our lower grades, are our geographies and readers. What wonders of travel and adventure, of natural history and science, are opened up by the former! Geography a dry study! why, it is an inspiration. But not if we suppose its study to consist merely in memorizing names of cities, boundaries of countries, and direction of river courses.

Prominent among the memories of my young days stands forth one particular page in Olney's Geography, containing a list of the States of the Union, and requiring the boundary, capital city, and chief town of each. It was a sort of *Pons Asinorum* to each succeeding class; and as we approached it we tried to estimate how many nights we should probably be "kept in" before we could master the dreaded task. Wall-maps, outline-maps, and map-drawing never came to relieve the dreary monotony of those lessons; still less that graphic presentation of the subject which invested the localities studied with a real, living, human interest.

Here a teacher must use a wise discrimination that the lesson shall not be a mere pouring-in of information, calling for no work on the part of the pupil, a process which is one of the greatest dangers of our modern theories; but he should tell just enough of the places mentioned to stimulate curiosity and open the way for further investigation.

You are studying, perhaps, the State of New York. The Hudson River is mentioned. You tell him of Hendrick Hudson, of the first steamboat launched on the river, of the strange legends of the Catskills; just a taste, and send him to Irving's "Sketch Book." How delightful the sensation to read for the first time the story of Rip Van Winkle—to make the acquaintance of Ichabod Crane, Brom Bones, and the blooming Katrina. You will not have finished the study of North America till you have located the scenes of Evangeline and Hiawatha, and perhaps introduced your adventure-loving boys to the Pathfinder, the Deerslayer, or the Spy. You will have brought to the notice of your class Higginson's "Young Folks," "History of the United States," and Coffin's "Story of Liberty," "Boys of '76," and "Old Times in the Colonies." If teacher of a younger class, you will have to read to them on some Friday afternoon from some one of the "Bodley Books."

As pupils advance, the field widens and opportunities multiply. In their weekly or fortnightly rhetorical exercises, insist on selections from standard authors; give topics for compositions that will call for research among the best books.

History does not hold a very prominent place in our curriculum, but we can supplement it by exciting an interest in the great men and women of past generations, and the manners and customs of the times in which they lived. For the Crusades we have "Ivanhoe," "The Talisman," and Gray's "Crusade of the Children"; for early English times, "The Last of the Barons," and some of the Schonberg-Cotta series; for the reign of Henry VIII, "The Household of Sir Thomas More"; for Elizabeth, "Kenilworth"; for the protectorate of Cromwell, "Woodstock"; for Queen Anne, "Henry Esmond"; for Scottish history, "Tales of a Grandfather," and "The Days of Bruce"; for Italy, "Rienzi," "Romola," and "Stories from Ariosto"; for Spain, "The Conquest of Granada," the "Alhambra," and "Columbus"; for Egypt, "Uarda," and "The Daughter of an Egyptian King." If we desire to pursue still farther these earlier times, we shall find that a good translation of Homer is not at all beyond the appreciation of intelligent pupils in our grammar schools, and that "Plutarch's Lives" will gratify the same appetite which feeds upon tales of robbers and pirates, or the more diluted rascality of Oliver Optic's heroes. Of Homer, a recent writer says: "One knows that Homer is the easiest, most artless, most diverting of all poets; that the fiftieth reading rouses the spirit even more than the first"; but, he adds: "A generation which will listen to 'Pinafore' for 300 nights, and will read Zola's seventeenth romance, can no more read Homer than it could read a cuneiform inscription." I wish that every teacher of the young in our State might read the article from which I quote. It is entitled, "On the Choice of Books," is a reprint from one of the English reviews of a lecture given at the London Institution, by Mr. Fred-eric Harrison, and may be found in "The Library Magazine" for April, 1879, published by the American Book Exchange.

Another wide field, and one no less important, lies in the direction of the natural sciences. The perceptions of the average child are so acute, that it is not difficult to train him to habits of observation, and lead him to original investigation of these subjects. He loves out-of-door life, and the companion-

ship of animals. The questioner is often surprised to find how much he can tell of the habits of his four-footed friends. He knows, too, where the birds build their nests, and the size, color, and number of their eggs. What a source of pleasure to him, Wood's "Homes without Hands," "Insects at Home," and other works by the same author; Miss Buckley's "Fairy Land of Science," "What Mr. Darwin saw in his Voyage round the World," and a host of similar volumes. So from every lesson a path may be opened which will lead to the seeking of wholesome books by the pupil.

I think mere preaching about improper reading accomplishes very little good. It puts the pupil on the defensive, and defeats its own end. This is a case where a counter-irritant is better than heroic treatment. We must remember, too, another thing. Children will read only what they enjoy. In later years other motives may guide them; but the books of their youth must possess a human interest on their own plane of living. A committee appointed by the Michigan State Teachers' Association, to prepare a list of 200 books for school libraries, reported 70 volumes of History and Biography, 37 of Travel, 30 of Fiction, 22 of Poetry, and 41 Miscellaneous; stating that they had been guided by two considerations: 1st, What books will be read? 2nd, What are worth reading?

The greatest danger to the young lies, of course, in the line of fiction. How few, even of adult readers, are careful to read only *good* novels. We must take this matter as we find it. It sounds well to say that people will read good books if they are provided for them, but facts do not support this statement. Boston claims to be the center of American culture, and has a public library of 370,000 volumes. The custodian of this library says that three-fourths of the books taken from its shelves are novels, and of this latter number, two-thirds are of the most sensational kind, like those of Ouida and Mrs. Southworth. Librarians nearer home give statistics which do not show that the taste of California has reached a higher standard of excellence. Who shall elevate it to a worthier level, if not those who have in charge the literary training of the young?

Charles Dudley Warner says, the reason why young people read trash is, because their parents and older persons about them read it. Then it logically follows that we must aim to effect some reform here. But how? Not by any aggressive warfare upon the public taste; not by any pedantic assumption of literary attainments. It will require much patience and more tact—the latter a qualification of more value in a teacher than many certificates, but which, not being easy to estimate at so much per cent., cannot be said to have any marketable value with examining boards. It would be no easy task for a much wiser person than myself to give any specific methods of exercising this invaluable quality. The character of the field must determine the mode of cultivation. In our larger cities, where the public have access to the shelves of the free library, it is fair to suppose that the trustees, and especially the book committee, are gentlemen whose education, taste, and judgment qualify them for the position. If so, they will not be unwilling to listen to suggestions from the teachers of their children, as to the books desirable to place on their shelves. Examine book catalogues, read reviews of

new books in our leading magazines, spend an hour occasionally in the bookstore examining new publications, and make known the result of your researches to the purchasing committee.

But suppose you are in a place where the only library is the limited one belonging to the public school. Suppose, moreover, the contents of this to have been selected with so little discrimination as to be almost useless. "Helen's Babies" nestling in the embrace of Bancroft's "Native Races," (of which there are thirty copies in Alameda County, alone) and the remainder either above the understanding or beneath the notice of the average pupil. Possibly the trustees have lent a confiding ear to the beguiling words of that book-agent, whose wares are resplendent externally in scarlet muslin and gorgeous gilding, while within they reveal the refuse material of some third-rate publishing house, adorned with a profusion of cheap wood-cuts of similar origin. Akin to him, is the vender of patent maps, charts, and other devices for taking the pupil, by a sort of educational express train, up that hill which we have been taught to believe is traversed by no royal road. These men survey their ground, approach the most pliable of the trustees, who, in many of our rural counties have no knowledge whatever of the practical workings of the school-room, and by that fluency of speech which is their chief capital in trade, palm off upon the district their useless wares, and pocket the money which should go to enrich the school library, or to provide needed apparatus indorsed by responsible authorities.

Unfortunately these are not mere hypotheses on my part. I have taken some pains to learn the existing state of affairs in our State, with reference to this subject, and believe that my imagination by no means transcends the bounds of truth.

By our State law ten per cent. of the school money in any district may be appropriated yearly to the library fund, providing such per cent. does not exceed \$50. The law further expressly forbids the alienation of any part of this fund for the payment of salaries, the purchase of text-books, or its use for any purpose except to provide school apparatus, and books for the district library. Each bill of books, moreover, is to be itemized, that it may appear just how the funds have been invested. I am informed that this law is continually violated or ignored, and that in some counties for months, perhaps years, no additions of any amount have been made to the school libraries; that in some districts there are found novels of the most worthless kind, as well as the meretricious works already alluded to. Possibly the recommendation of Superintendent Carr, in 1877, may have given excuse to some county authorities for a diversion of the fund. Permit me to read an extract from his report of 1879:

"The neglect of trustees to secure the library books, and the illegal purchase of books not upon the list, which are hawked about the country by itinerant agents, and the successful efforts of booksellers to foist refuse stock upon the school libraries, led me to recommend such a change in the law as would allow the use of this fund for the payment of teachers' salaries.

"Since then, the publication of facts, respecting the enormous sale of trashy and demoralizing weeklies for boys, and of sensational stories for girls, with

other considerations, induces me to recall that recommendation, and to urge upon teachers the duty, not only of teaching their pupils to read, but how and what to read profitably. Mr. Charles Francis Adams, in an address to the teachers of Quincy, Massachusetts, has touched the heart of the subject :

“The connecting link between school-education and self-education we fail to supply. Though the school and the library stand side by side, there is, so to speak, no bridge leading from one to another. As far as I can judge, we teach our children the mechanical part of reading, and then we turn them loose to take their chances. If the child has naturally an inquiring or an imaginative mind, it, perchance, may work its way unaided through the traps and pitfalls of literature; but the chances seem to me terribly against it. I think this is all wrong. You, teachers, are able to give your scholars a general introduction to literature, which, if you do give it to them, is worth more than all the text-books that ever were printed.”

The fact that our existing law does not prescribe a list of books, from which selections must be made, calls for all the more earnestness on the part of superintendents and teachers, to see that this most important adjunct of our daily teaching is utilized to its fullest extent. I am aware of difficulties in the way. I know that so long as educational matters are wholly, or mainly, in the hands of politicians, we can hope for only a measure of the success demanded by the amount of money and talents invested in the common schools of this State. But I nevertheless believe, that with the law and the Constitution on his side, a superintendent or a teacher might safely demand his rights in this respect, and rely on his ability to mold the literary taste of the public, rendering thus his work of enduring value. I believe not only that he might do this; I believe it to be one of his most sacred obligations; and when I remember how many lives have been shaped, for good or for ill, by the influence of a single book, I think I do not overrate the importance of this duty.

If we take any just or comprehensive view of our responsibilities, we give to the cultivation of the moral nature our first and best endeavors. For one, I am ready to subscribe to Mr. Matthew Arnold's opinion, that “conduct is three-fourths of life.” It is only repeating a truism to say, that if the heart is corrupt, every degree of added culture to the mind gives the possessor an increased power for evil, which must be felt in society. It is for us to purify, so far as we may, the fountains of thought and feeling, and we shall find no means so potent as to infuse the sweet and healthful streams that flow through the channels of literature from the minds of the great and good of all ages. At our last annual meeting the desirability of a text-book on morals and manners was discussed. The world is full of such books. Let us hold up to our pupils, as an inspiration, the pure, the noble, the heroic, the sublime lives on the pages of the world's history, and we shall need no special text-book, from which to dole out vague generalities or moral platitudes.

The sum to which each district is entitled would, if judiciously expended, provide, in a few years, a most valuable collection of books. Let the teacher watch his opportunities, and secure publications of standard value, consigning worthless books gradually to some obscure corner of the shelves.

ORAL LESSONS IN LANGUAGE.

IN TWO PAPERS—PART I.

Weight. Furnish in addition to the objects which the class see and handle, a few packages which look alike, but differ in weight. Develop the correct ideas, and teach the pronunciation and use of—

1. *Light* and *Heavy*.
2. *Heavy*, *heavier*, and *heaviest*.
3. *Light*, *lighter*, and *lightest*.
4. Large (in size) and light (in weight).
5. Small (in size) and heavy (in weight).

Plan. 1. Have the objects distinctly named; as, *cork, iron, a sponge, a book, a feather, some packages*, (bundles or parcels). Let the children talk freely about them—tell the use of cork, iron, or sponge; where the feather grew, and what color it is, etc.

2. Have a pupil stand with arms outstretched at the sides. Place a light object on the tips of the fingers of one hand, and a very heavy object on the other. Lead the class to state that the stone made the arm drop, and the sponge did not. Repeat with various objects and several children.

3. Obtain or teach *light* and *heavy*.

4. Ask the class to find things in the room that are *light*; that are *heavy*.

5. Apply to the paper parcels, and lead them to state what we must do to find out if anything be light or heavy.

6. In review, have the pupils apply two or more terms to the objects found; as, The poker is *short, thick, heavy*; the *long, light* pointer, etc.

Place. By proper questioning, and by a suitable arrangement of objects, lead the class to pronounce, and use correctly, the ordinary prepositions; as—

The box is *on* the table.

The pencils are *in* the box.

The stool is *under* the table.

The stove is *by* the window.

The bell is *between* the box and the book.

Mary is *near* the fire.

They knocked *at* the door.

We rode *down* the hill.

We walked *up* the hill.

They ran *from* the dog.

Caution. 1. Do not allow the use of "*frum*" for *from*; "*uv*" for *of*; "*ewwt*" or "*deown*" for *out* or *down*.

Form. During the latter half of the year the class may be taught objectively a few words which express *form*; as—

1 All that we can see or touch of the ball, (the box, the block, etc.) is its *surface*.

Plan. 1. Have the objects named.

2. Hold up a ball, and ask what it is. How do you know?

3. Take the ball and show me all of it that you can see. Touch all of the ball that you can see.

4. Repeat with various objects and several children.

5. Who knows what to call all that we can see or touch of the ball? Children, or teacher, give term *surface*.

6. Drill on a pronunciation of the word. Application: as,

Take something from your desk and show me its *surface*. Show me all of its *sur-*

face. What is the *surface* of the box? What (of this block, etc.) am I touching? What (of the ball, etc.) do you see?

2. The ball, egg, apple, etc., has a *curved* surface.

Plan. Push a ball and then a box. Lead the class to say that the ball rolled, that it rolled on its surface; that the egg, apple, etc., rolled on its surface; that the box, book, etc., will not roll. Teach "*curved surface*," and apply to objects in and out of school, or which may be brought to school; as a lemon, marbles, a grape, an orange, etc.

3. The box, block, book, etc., has a *plane* surface.

Plan. Review *curved surface*. Teach *plane surface* by a similar plan.

4. This is a *face*. These are *faces*.

5. The face on which the block will roll is a *curved face*. A face on which the box will stand is a *plane face*.

Plan. 1. Hasty reviews of *surface*, *curved surface*, and *plane surface*, with application to the objects to be used in the lesson.

2. Call attention to something shaped like a hemisphere, or cylinder. Show all the surface. Show that it will both roll and stand.

3. Have a child put his hand over the part of the surface on which it will stand; touch every bit of the part; say that he is touching a *part of the surface*; that the box will stand on this part of the surface. Repeat with other objects and different pupils.

4. Find a part of the surface on which this will roll; show all of that part; tell what you are touching. Repeat with objects which have plane surfaces.

5. Teach *face* and *faces*. Apply to many objects. Lead the children to use the terms *curved* and *plane*; to tell what a *curved face* is; what a *plane face* is; and that a *face is a part of a surface*.

6. Review with varied application.

6. This is an *edge*. These are *edges*.

7. This is a *straight edge*. This is a *curved edge*.

Plan. 1. Take a block or box. Call attention to an edge. Who can take another block and find something on it like this? Apply to the desks, table, etc.

2. Who knows what this is? Drill on *edge*.

3. Find another. Another. What shall we call all of these? Drill on *edges*. Find three edges that are alike.

4. By moving the fingers toward each other, on two adjoining faces, till they meet on the edge; lead the children to state, "Where two plane faces meet is a *straight edge*." "The edge between a plane face and a curved face is a *curved edge*."

5. Application. Find a face and tell us about it. Say something about this edge. What is a plane face? On what kind of a face will a box roll? Show me all that you can see or touch of the orange. What is it? What kind of a surface has the orange? See if it will roll on its surface. Pick out a block that has one curved face, one plane face, and one curved edge. Take something from the table and tell us all you can about it.

6. Bring something to school that has a plane surface.

8. A picture of a straight edge is a *straight line*. A picture of a curved edge as a *curved line*.

9. This straight line is *vertical*. This line is *horizontal*. This is an *oblique* line.

NOTE.—The review of the words taught should be by means of application to new objects. If the pupils were six when they entered school, they will be able to take in connection with the review.

10. This is a *sphere*. This is a (half-sphere) *hemisphere*.

11. This has two curved edges; it has two plane faces, and a curved face between them; it is a *cylinder*.

12. This has six plane faces *just alike*; it has eight corners; it has twelve straight edges; it is a *cube*.

13. This has one curved edge; it has one plane face; it has a curved face that ends in, tapers to, a point called an *apex*; this is a *cone*.

In application of the words which describe lines, the teacher may make a drawing on the blackboard, and have the class point to the various lines, and tell what kind of a line each is. Or, the teacher may indicate: "Draw a vertical line. Draw a straight line. Draw a curved line. Draw a horizontal line. Draw a straight line that is neither vertical nor horizontal; what kind of a line is it?" Or, each child may be allowed to make a picture, using a limited number of lines, and describe his picture to the class.

Minerals. The list of words to be taught by these lessons must vary in various localities. In every school the children may be taught to distinguish and name—

MARBLE,	GOLD,	COPPER,	ZINC,
SLATE,	SILVER,	LEAD,	PEBBLES,
COAL,	IRON,	TIN,	SAND,

and the minerals common in their own locality. They should be able not only to name but to say something about each; as, The pebble is *smooth* and *white*. It is *small* and has a *curved surface*. Iron is *heavy*. This piece of marble is *cold* and *heavy*. Gold is *yellow*, but the coal is *black*. This stone is *large* and *rough*. The sand *sparkles*. The tin is *bright*.

Sound. The lessons on sounds may be given in five or ten minutes, as a relief to any slate exercise, or attention to a book or chart. Of course, the eyes must be closed, or the face averted.

Plan. 1. With all eyes closed, touch a bell and ask, What did I do? How do you know? With what did you hear? Show me your *ears*. How many ears have you? Touch one of them, and say *ear*. Drill. Touch both, and say *ears*. Drill.

2. "*All look and listen.*" Touch two bells, or a glass and a piece of wood. "*Close your eyes.*" Touch one only, and ask, "*What do I touch?*" Have the class agree. "*How could you tell?*" Children. "*By the sound.*" Apply to an empty glass, and a glass full of water, and to many various objects.

3. Touch an object gently, then sharply. Lead the class to say that it was the same thing, but one sound was *loud* and the other *low*, or *soft* or *faint*.

Have the class name sounds they like, and sounds they do not like; imitate sounds; tell why people keep a canary bird in a cage instead of a goose or a peacock; recognize each other's voices and footsteps; and use words that tell *sounds*: as—

The bell *rings*.
Boys *whistle*.
A bee *buzzes*.
Geese *hiss*.
Peacocks *scream*.
A robin *chirps*.
A rooster *crows*.

Birds *sing*.
Parrots *talk*.
The cat *mews*.
Horses *neigh*.
The crows *caw*.
Larks *warble*.
A hen *cackles*.

The dove *coos*.

Lambs *bleat*.

The duck says "*Quack, quack*."

The bob-o-link says, "*Bob-o-link*."

We *whisper, laugh, talk, sing, shout, whistle*.

Animals. No attempt should be made to give these lessons the formality of scientific study. They are to be simply *talks* about familiar animals, to lead the children to observe closely, and to state what they know in good language. When it is necessary to use a picture, as for a lesson about the cow or horse, have the class see the animal out of school, and verify, or add to, the statements made. Whenever possible, have the living creature or a stuffed specimen before the class during the lesson. Any bird in a cage, or stuffed bird, a globe of gold-fish, or a specimen from the fish-market, will furnish the class with something to say. If a picture be used, choose one large enough for all in the class to see; and when the animal is named, have different children show on the wall *about how high* it is, or name some other animal *about as large*. Not all the points indicated in the general plan, given below, can be taken in one lesson. The character of the previous lessons must determine which may be omitted.

The names of parts common to all, as *head, body*, may be written upon the blackboard, and will soon be learned by the word-method.

General Plan. 1. Name of animal.

2. What it does.

3. Parts named and counted.

4. Description of parts.

5. Use of characteristic part; as, wings to a bird, fins to a fish, horns to a cow.

6. Uses of the animal to us.

7. Parts useful after death.

8. Name of parts used after death; as *meat, hide or leather, mutton, pork*.

9. Treatment.

10. Name of young; as, *calf, chicken, colt, lamb, kid, gosling, kitten*.

In considering *treatment*, the teacher has an opportunity to appeal to the moral nature of the child; to call attention to the creature's mode of defense; as, The cow *hooks*, The horse *kicks*, The dog *bites*, The rabbit *runs*, The cat *scratches*, The bee *stings*, The bird *flies*; to teach two or three words which tell about the disposition; as, The lamb is *gentle*, The rabbit is *timid*, The dog may be *cross*; and two or three others; as, *shelter, protect, or defend*. It need not be feared that the word is too long, *if the idea is clearly apprehended*. A child can say *wheelbarrow* as quickly as *saw* when he has a lively interest in the object.

It will be seen that there is no lack of material for Language Lessons in the most elementary schools. And there is no excuse for neglecting English in any schools. Children like to see things, and to talk about them. Grant them this right, enter into their spirit, and the path will be clear.

If a student convince you that you are wrong and he is right, acknowledge it cheerfully, and—hug him.—*Emerson*.

HERO AND HERO.

BY CLARA G. DOLLIVER.

Little and bent and spare,
 Weary with years of care,
 Who kens the cross you bear ?
 Surging crowds praise and cheer
 Proud hero passing near,
 Famed conqueror of fear;
 Pressing to touch his hand,
 Half crush you as you stand.
 Oh, bravest in the land!
 Laurels that he has gained
 Have left him scarred and maimed—
 Have left him battle-stained.
 Oh! how they cheer and cry,
 Sending his name on high!
 Passing a greater by.
 He feared not how it fared;
 You, woman, feared and dared!

Yourself have never spared.
 That thin shawl closer fold!
 Little and bent and old,
 This world is coarse and cold.
 He must, to be their god,
 Have fought with fire or flood,
 Or sealed his name with blood.
 Your battles—fought from sun
 To sun, and never done,
 The triumph never won—
 They have no eyes to see;
 So greater shall it be,
 The final victory!
 So sweeter shall they cry,
 The voices from on high:
 "We hail thee, Hero! Die!"

PRIMARY READING.

BY PROF. JOSEPH CARHART.

[Teacher of Reading in State Normal School of Indiana.]

THE subject-matter of primary reading should be printed words, with whose meaning and spoken form the child is already familiar.

The immediate purpose of primary reading is to lead the child to substitute the printed form for the spoken word.

The following are steps to be taken in the realization of this purpose:

"I have always had a fancy that learning might be made a play and recreation to children."—"Some Thoughts on Education,"—*John Locke*.

"One thing at a time is sufficient for the mind of a child."—*Ibid*.

The child's interest in his work will be the measure of his progress; and to secure the interest, the teacher must observe the law of the child's mind—from the known to the unknown; from a knowledge of the whole to a knowledge of its component parts.

Give the name of some common object, say cat.

Known. { Idea.
 { Spoken word as a whole.

Unknown. { Printed words as a whole.
 { Component sounds of spoken word.
 { Component letters of printed word.

The word *cat* is selected because it is the name of an object familiar, pleasing and interesting to children; and because the parts composing it enter into many words with which the child is familiar, so that a knowledge of this word will help him to form others.

1. Tell the class an interesting story about a cat. Let them find the picture of a cat in their books, and identify this with the subject of the story.

2. Print the word *cat* upon the blackboard, and teach the children that it, like the picture and the spoken word, is the sign of the object *cat*. Print the word in several places upon the board, and let the children find it in their books.

3. Print the word *cat* on the board in a number of places in connection with other words widely different in form, and let the children find the word *cat*.

4. Teach the words *a*, *my*, and *the* by printing them on the board in connection with simple outline pictures of objects familiar to the children; finally the picture of a cat to be replaced by the now known word *cat*, and the phrases, *a cat*, *the cat*, and *my cat* to be learned as wholes.

5. The word *rat*, and the phrases, *the rat*, *a rat*, and *my rat*, to be learned as were the first words and phrases.

6. The word *rat*, and the phrases, *black cat*, *black rat*, and *the black rat*, *my black cat*, etc., also the words *has*, *and*, and accompanying phrases, to be learned in the same way.

7. Give the child some employment at his desk that will make permanent the results of the recitation.

Among the exercises employed in the child's first lessons in reading, for the purpose of giving him employment, and leading him to observe closely the forms of words, printing upon the slate holds a prominent place, although it is less popular now than formerly. Printing is a difficult exercise. It wearies the child, and when he discovers that he cannot accurately reproduce his copy he becomes discouraged, and the exercises are distasteful to him. Experience has shown that practice in making printed letters has no value as a means of making script letters. The "pricking" or "perforating" exercises in use in Kindergartens are intensely interesting to children, and can be used with decided advantage in connection with the first lessons in reading. Into the end of a stick, about the size of a lead pencil, thrust the eye of a needle until the point projects a half an inch. Upon a piece of soft card-board or writing-paper print the words the child has learned in his reading lesson. Place this before him upon his desk on a piece of cloth or felt, and let him perforate the lines with his "pricking pencil."

8. Teach the child to spell phonically, "say in little pieces," words which he has learned as wholes.

9. Teach the formation of new words from the sounds already learned.

10. Teach the relation of parts of the spoken word to the parts of the printed word.

11. Teach the building up of new words with alphabet cards. (These cards are invaluable aids, and can be bought for a nominal sum.)

12. Practice reading short stories containing only words already familiar to both ear and eye.

13. Teach the names of letters whose forms and sounds are familiar to the pupil.

14. Lead the pupils to use full and correct sentences in conversation upon the subject-matter of the lesson.—*Manual of Vermilion County, Ind.*

LESSONS IN BOTANY.

GIVEN IN THE JUNIOR CLASS OF THE SAN FRANCISCO GIRLS' HIGH SCHOOL.

BY VOLNEY RATTAN.

IF to witness fair practice is more profitable than to listen to admirable theory, then may a report of actual work be more valuable than the details of what might have been done. This is the sole apology for offering the following outlines of lessons given to a class of beginners in botany.

LESSON 1, JANUARY 6TH, 1881.—Three hundred young milk thistles (*Silybum Marianum*) were dug up on Sacramento Street, near Hyde, that each girl might have in her hand the subject of the lesson. After a few minutes spent in examining the plant, those pupils who had anything to say were called upon in turn. Finally it was decided that the following facts were worthy of note: This plant is made up of leaves, stems, and roots. The leaves are of two kinds, viz., a pair of smooth-edged, rather fleshy leaves, and several prickly-edged leaves blotched with white. The former are outside and below the latter, and since a few of the plants only have the smooth leaves, these must be the older. They belong to the plant when it first peeps above the ground, and may, therefore, be called the *baby leaves*. In some of the older plants which have many prickly leaves, the baby leaves have withered, showing that they belong to the baby plant only. It is probable, then, [this from the teacher] that the two kinds of leaves are as different in nature as in appearance. As baby animals require food and treatment different from that which is good for their parents, so it is reasonable to suppose that baby plants must have food and protection not required by grown plants. Doubtless we shall presently learn just what these peculiar leaves are for.

A few pupils knew the plant to be a thistle, and several could describe another kind which grows in the suburbs of the city. They were told that this plant is a foreigner from the shores of the Mediterranean.

LESSON 2, JANUARY 10TH.—Young lupines (from a vacant lot on the corner of Washington and Franklin) were placed in the hands of the pupils

(See Fig. 1.) That this plant, like the thistle, has leaves, stem, and roots, was first noted. By degrees descriptions of the leaves were elicited. Of course the compound leaves were a puzzle, and they were helped to decide how much of the leafiness should be called one leaf. Only a few discovered the pair of appendages at the base of each leaf stem. It was discovered that the first leaf to appear after the baby leaves had usually three leaflets, the next four, Fig 2. the third five, and the fourth six. As no plant had yet produced more than four such leaves, it was an undecided question where this increase of leaflets would stop. The baby leaves were compared with those of the thistle, and found to differ from the latter in that they had stems, were one-sided, and were more fleshy. As some of the girls recognized the plant, they were reminded that baby plants do not

Fig. 1.



always resemble the grown plants, their childhood leaves, as they may appropriately be termed, being quite unlike those that clothe the stems of the grown plant.

Sweet peas were distributed to be planted.

LESSON 3, JANUARY 13TH.—Another kind of lupine—the yellow-flowered shrub, *Lupinus arboreus*—was obtained from a sand-hill nearer Kearney Street than the Boys' High School. Its likeness to the other species at once stamped its name. The two were compared, memory supplying the description of the species previously examined. Most of the specimens had sand clinging to their roots (See Fig. 2). There was an endeavor to find the cause. A few succeeded in finding it in the fur-like hairs which



thickly covered the roots. They were told that the other lupines had similar hairs, which were pulled off in getting them out of the clay soil in which they grew. The use of these hairs was discussed. A few plants which had but just come up (Fig. 2) were shown—a hint to thoughtful pupils of the origin of the baby leaves. The use of this plant to keep the sand from drifting was spoken of.

Buckwheat seeds were distributed to be planted.

LESSON 4, JANUARY 17TH.—Enough specimens of tree-mallows (Kellogg's *Lavatera*) were easily found on the corner of Washington and Jones Streets. The heart-shaped baby leaves with their long stems were easily described. Strangely enough, but few noticed that one of these leaves is smaller than the other. Why, was left for future investigation. Attention was directed to the stem which had begun to grow above the twin leaves—the beginning of the true stem.

Seeds of castor bean were distributed.

By this time many kinds of seedlings had been found by the pupils, and many facts about them discovered. Some of the curious baby plants of *Lupinus densiflorus*, (see Fig. 4) whose twin leaves are of the Siamese kind, were found within the city limits. They come up as represented in Fig. 3, but when they spread out it is seen that their bases are joined. They grow to be as large as shown in Fig. 4, and the edge becomes slightly notched before there is any sign of the true leaves. Presently these burst out of a whitish, pustule-like swelling on the line of union. Further investigation reveals the fact that their bases are in the hollow stem below the united leaves. Hence, it is plain that these twin leaves have short stems which are also united to form a tube, in the hollow of which was the bud from which the true leaves grew. The reason for this peculiar growth is yet to be discovered.

LESSON 5, JANUARY 20TH.—The pupils were supplied with sprouting beans and squash seeds. Here was the opportunity to come to an understanding of the true nature of what we had all along called baby leaves. It was not difficult to show that in each seed there was a baby plant with a pair of fat leaves joined to a short stem. Between these was a bud which would evidently develop true leaves. Only the roots were wanting. These were seen to grow from the stem soon after it had begun to sprout. It was agreed that the stem in the plant already examined must have grown upward far enough to push the baby leaves above the surface of the ground. The sweet peas, planted ten days before, were reported to be up, and without any baby leaves. The pupils were told to dig up one of these plants to see if these leaves were not underground. After tasting the squash seeds and recalling the taste of baby beans when baked or boiled, the name *leaves* for the parts which constitute nearly the whole of these seeds began to seem inappropriate. It only required proof—which they were expected to dig up in the evening—that in some plants these parts never come up, or grow to resemble leaves, to make the inappropriateness conclusive. However, the proper names for the parts of the embryo were not learned at this lesson.

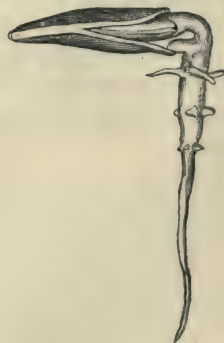
Fig. 4.



Fig. 3.



Fig. 5.



The curious contrivance which enables the cotyledons of the squash to slip out of the seed coat was not overlooked. The seeds naturally lie flat when

planted. As soon as the radicle leaves the seed it turns directly downward, and a little knob begins to grow inside of the seed coat next the lower side. (See Fig. 5.) By the growth of the stem between this knob and the cotyledons, the seed is pried open so that the cotyledons easily slip out. M. Flahault, a French botanist, demonstrated, in 1877, that the seeds, which from being planted edge-wise or for other reasons, came up with the seed coat on, invariably failed to produce as strong plants as those which cast them off. He also showed that the cotyledons were unable to free themselves when this knob was kept from acting by cutting off the tip of the under-side of the seed coat.

THE eminences of their scholars commend the memories of school-masters to posterity, who otherwise, in obscurity, had been altogether forgotten.
—*Thomas Fuller.*

MENTAL CALCULATION.

FROM time to time we read of individuals that have a wonderful faculty of combining numbers mentally, even to the extent of extracting roots of a high degree and finding large products. Such persons are frequently deficient in the power of logical analysis, and it by no means follows that one who is poor in calculation, or as the phrenologists say, "small in number," will also fail to understand the principles of mathematics. In a recent article we alluded to the importance of mental analysis, as the expression is understood in intellectual arithmetic. It is also important that pupils should be taught to deal with large numbers mentally. A course in mental arithmetic does, to a certain extent, exercise the faculty of number at the same time that the reasoning powers are strengthened; but the first result is regarded as secondary, if, indeed, it is considered at all, except incidentally.

A proof that mental drill in numbers is neglected in the schools is seen in the prevalence of the addition method of making change in money transactions. A dollar is given to pay a bill of 75 cents. The merchant gives back two dimes and a "nickel," and says: "Seventy-five, eighty-five, ninety-five, one dollar," and this process is satisfactory to the other party. It would be better to count the change, having determined that by direct subtraction.

Again, it will be noticed that a majority of men instinctively look for a pencil and slate or paper when required to perform even the simplest computations. It may be claimed that the mechanical process of solving arithmetical problems is more likely to be accurate than the purely mental one, but such, at least, has not been our experience.

We have noticed, on the contrary, that a process carried on in the mind is less likely to be wrong, and the reason is plain: When the numbers are writ-

ten on the mind, they are brought in contact, so to speak, with the faculty by which they are operated upon. When they are written upon the slate, the eye which sees them may also see other objects, and thus send other impressions to the brain to confuse the calculator, who is likewise liable to error by reason of placing too much dependence on his written figures.

We would recommend that the multiplication table be learned up to 16 times 16, and that more stress be laid on the various methods of contracting arithmetical operations. He who has all these in his mind will generally find one that will apply to the problem in hand.—*Educational Weekly*.

PICTURE-MEMORY.

NOTHING is harder than for one man, if unpracticed in such work, to enter into and appreciate what can be the state of mind of another man different from himself perhaps in this one thing, viz., in his way of remembering things. Quite lately Mr. Galton, the noted author of the book on "Hereditary Genius," has been publishing certain results of his as to the way in which some people remember numbers, and think of the numeral symbols. According to Mr. Galton's communications to *Nature* on the subject, it has been found that about one in every thirty persons chosen at random has a good image-memory for numbers, and has arranged in his imagination at some time far back in his childhood days the numeral symbols up to twenty or more, in the form of some odd kind of pattern or figured design, so that thinking of numerals, or on having to work out some problem in mental arithmetic, such a person thinks of his self-made scheme of numerals that has now become a second nature to him, and helps himself thereby. One of Mr. Galton's correspondents, for example, finds numeral symbols appearing in his memory as standing in a row along an oddly curved line. For the numbers from one to ten the curve approaches a circle, but is not quite a closed circle. The symbols are arranged, in fact, as if on the face of a watch or clock, beginning near the top of the figure. Just at ten, however, the curve becomes broken, and eleven and twelve are found a little to the left of where they ought to be on a watch-face. But at twelve the line breaks away altogether, and sets off to the left in almost a straight course and without a limit. Along this line the correspondent sees the numerals 13, 14, 15, 20, 30, 50, 100, etc., at increasing distances as far as his mind's eye chooses to follow. Other persons have yet odder schemes, which you can see if you like in Mr. Galton's paper.

To some the remembered numerals vary in color in numerous ways. Yet others associate human characters or moral qualities with the numerals, and so on very indefinitely. Now, people who do not arrange the numerals in their minds in some such odd way find it very incomprehensible that any one should do so, and are commonly inclined to believe Mr. Galton a dreamer for asking such questions, and his correspondents visionaries or untruthful persons for sending such answers. Yet Mr. Galton assures us that he has no doubt of his

facts, and that he is much pleased to come upon people who having involuntarily formed these schemes as patterns in their minds, and having long concealed or seldom mentioned the fact for fear of being laughed at, now show at the first word of his an eagerness to describe what has long amused or assisted them in secret. Surely such investigations open to us a whole world of inner experience, whose existence in our fellow-men we should never suspect, did not some ingenious cross-questioner find the means of bringing it to our knowledge.

J. R.

SINGLE AND DOUBLE SCHOOL SESSIONS.

IF the subject involved no more serious question than the dinner hour of the parents, it would, perhaps, not be suitable for our consideration; but as the hygienic aspect of the matter has excited some attention, we may permit ourselves a few words in regard to this. Chadwick, the best authority as yet on this topic, concludes that a child from the age of five to seven can attend to one subject for fifteen minutes; from seven to ten years of age, about twenty minutes; from ten to twelve, about twenty-five minutes; from twelve to sixteen or eighteen, about thirty minutes. The total daily mental work suitable for a young person from twelve to sixteen years of age, taking Chadwick's estimates as a basis, and making allowance for the rapid development at this period, is placed at from five to six hours. Where children are not over-stimulated to study out of school hours, these conditions, we believe, are fairly met in our public schools by change of subject and short and repeated recess, whether the session be a single or double one. But the question of the child's capacity for play, and for continuous play, is quite as important as his capacity for study; and the risks incident to repeated journeys to and from school, in the very exposed part of the city where this particular school is situated, are not imaginary, and these two points seem to have been instinctively seized by children and parents in desiring a single session. In this case we think practical experience has the advantage over abstract reasoning.—*Boston Medical and Surgical Journal*.

HOME INFLUENCE.

THE uttermost that can be done by the most skillful teacher, remarks a "contributor" in the *Atlantic* for January, will be disappointing in its results, unless backed and supplemented by home practice. How our common schools, with their twenty minute recitations, can meet the obvious deficiencies of our common homes, in these particulars, is not an easy question for decision in this our day. Many a boy and girl recites glibly in the school-room, not

alone the essentials of grammar, but its most eccentric vagaries, who at home uniformly doubles negatives, and divorces substantives and verbs. Perhaps nothing short of genius in the teacher, and special inspiration in the pupil, can suffice to reveal to a child who hears only incorrect and rude speech at home that the rules of grammar and rhetoric have the remotest connection with the language of his own daily life. * * * "I am amazed at the presumption of parents," cried the principal of a famous young ladies' boarding-school. "They send me their children again and again, with the cool demand: 'Make my daughter orderly,' or 'truthful,' or 'gentle;' requiring of me during six months or a year of less intimate association and hampered opportunity, what they have failed to accomplish in sixteen years or more of closest contact, and with every advantage of supreme authority and interest!"

EDITORIAL DEPARTMENT.

SCHOOL SUPERINTENDENCE.

ABOUT the most important feature of the so-called Quincy System is the recognition of the value of thorough supervision. Mr. Charles Francis Adams, Jr., who, if not the discoverer, may at least be regarded as the historiographer of the *terra incognita*, in a recent article in *Harper's Monthly*, urges the establishment of a special course in our universities and colleges, that may furnish, as the result of such supplementary training, men peculiarly adapted and fitted for the management of the schools of our cities and counties.

To us on the Pacific Coast this idea of thorough school supervision is no new thing. A complete system of county, city, and town superintendence was provided for in the School Law of twenty years ago. It established the office of superintendent, and provided that in all thickly-settled communities, that official should attend exclusively to the duties of his office. The new Constitution of California fixed this principle as more than a mere statutory provision, by making the superintendent a constitutional officer.

It is not necessary at this day to enter into an argument to prove the value of school supervision. With us it is conceded that there can be no uniform and effective results looked for from the schools unless these are maintained under the watchful eye of a conscientious, cultured educator. Nor can we agree with Mr. Adams, that a supplementary course in our universities is necessary to make such educators. We have all the means and appliances now in our normal schools, our pedagogic literature, our educational journals.

To be an efficient school superintendent, no extraordinary range of qualifications is essential. He must be thorough in his scholastic training, for he should always be one step, at least, in advance of his teachers. He should possess fair executive ability, for many of his duties are of an administrative nature. He should be a teacher successful in practice, so as not to present the spectacle of

criticising that in others whereof he himself knows nothing by experience. He should be a strong man morally and in the backbone; for to him, as a court of the last resort, will many disputed questions be submitted, on him much pressure will be brought to bear, and from him many favors be expected.

There are men enough everywhere who answer to this description, but they are not all school superintendents. Under our present system of remunerating public officials, the wonder is, that the State has enlisted so large a proportion of competent men. The school superintendent has been ranked in the same level with the county surveyor, or the village constable, or justice of the peace. The men best adapted for the position have often been obliged to refuse it on account of the inadequate compensation. The trouble seems to be that the community cannot get it through its head that education costs money. It is generally acknowledged a desirable thing—a good thing—and all good things are expensive.

We have an excellent system of school superintendence; of this there is no doubt. If that system is to be made as effective as contemplated in its establishment, it must be done by selecting the best men, and paying them decent living salaries. To do otherwise is a penny-wise-pound-foolish policy. The Legislature, now in session in Sacramento, should see to it, that this important adjunct of the system be not crippled and rendered ineffective from a mistaken spirit of economy.

TEACHERS' INSTITUTES.

AT the recent Convention of County Superintendents held in this city, the subject of "Teachers' Institutes" elicited a full discussion. It soon became evident that some superintendents do not regard these meetings with favor. Nor is this much to be wondered at. As Teachers' Institutes have been generally conducted in this State, they have not been of great service to that large class of teachers whom mainly they are designed to benefit.

There seems to be no well-defined idea, among a large proportion of superintendents and teachers, of just what is the function of the Teachers' Institute, and what are the best means to successfully carry out its designs.

We believe if these two points were understood by our superintendents, the usefulness of the Institute would be decidedly increased.

What is the place of the Teachers' Institute in the educational system? As we comprehend it, it is chiefly to supply the lack of normal-school training by giving instructions in known and approved methods of teaching. When it is considered that only one-tenth of our teachers have ever been instructed in scientific methods; that nine-tenths do in their schools precisely as their teachers did before them; that in this way are perpetuated the errors and barbarisms of a bygone system of education, we can see the importance of any process or means that illustrates, as practically as may be, what the wisdom and experience of the world have discovered as best adapted to keep pace with the civilization of our age. It is, then, as the *Normal* Institute that these meetings of teachers find their legitimate [and most useful function.

Again, it serves to keep alive a professional feeling, an *esprit de corps*—without which no occupation or calling can find itself respected, or feel that high self-respect which is certain to command the respect of others. Teachers

here have an opportunity to learn the ethics of the profession; to find, that though set apart by the nature of their toil, secluded mayhap on desert-like plain, in lonely canyon, or amid forests almost primeval, and always "far from the madding crowd's ignoble strife," they are yet an important unit in the vast host that struggles onward and upward to a higher destiny—one indispensable factor in the grand product of that ideal civilization, to which tend the noblest aspirations of all mankind.

So it is by means of these Institutes, rightly conducted, that teaching as a profession is conserved. And by preserving this high place, none are benefited more than the community whose children are taught. It is, in fact, capable of mathematical demonstration, that the burden of these Institutes falls on the teachers; the benefit on the children in the schools. This is another reason why their object should be clearly understood; some uniformity established in their general management throughout the State, and no time wasted on useless discussions or petty quibbles, on trifling details or schoolmasterisms.

It is hoped that the Legislature will take some action in amending the School Law on this point. It would be easy so to amend the law as to make these meetings more like *normal classes*, and at the same time give them that general educational and instructive character that will enlist the sympathy of the older teachers, and the interest of the community.

SOME CONTRIBUTIONS AND CONTRIBUTORS.

WE believe the articles in this number of the JOURNAL are entitled to more than a brief mention. Mrs. Fisher's contribution on "Our School Libraries," or, as it might well be called, "On Reading," is entitled to its place of honor. It is a permanent addition to our educational literature. On account of its length we were compelled to divide it into two sections, Part II to appear next month. It is at once a delightful essay on literature; a guide for the reader on the selection of the best books, and a catalogue for the District Boards of Trustees from which to select the best books for their school library. We are confident every reader will agree with us heartily, that this one article is worth double the subscription price of the JOURNAL for a year.

Prof. Volney Rattan favors us with an excellent practical article on January's work in botany with his high-school classes. The teachers of this branch, and those interested in the science, will find the article replete with suggestions, and especially valuable, inasmuch as it tells *how* the subject has been and is being taught.

Prof. Rattan is winning distinction not only as a superior teacher, but as one of the closest observers of natural phenomena in our country. We had recently the pleasure of seeing an advance copy of Charles Darwin's new book on, "The Movements of Plants," not yet published in this country, where Dr. Darwin in several places compliments Prof. Rattan for discoveries in botany, which show him possessed of those qualities essential to the true scientist.

The article signed J. R. is by a gentleman connected with the State University, from whom we are promised further contributions in the future.

Miss Clara G. Dolliver gives us a poem—"Hero and Hero"—which contains

a moral. Miss Dolliver's lines are always more than a mere jingle—they breathe the true spirit of poesy.

For our March number there is already on hand an article by Charles H. Shinn—"Chats with Teachers"; by Prof. E. Knowlton, on "Memory," and by Dr. Robinson, on "The Care of the Teeth." We are promised a sketch by Miss Dolliver, and an article by Prof. E. R. Sill of the State University.

Prof. Sill can not speak too often to the teachers, trustees, and citizens of the State through this JOURNAL. His style and logic, at once incisive and powerful, remind us of Sir Walter Scott's description, in "The Talisman," of the trial of skill between Richard *Cœur de Lion* and Saladin, where the former, with one blow of his ponderous battle-blade, cuts in two a heavy mace; while the Saracen, with his keen Damascene sword, divides a silken cushion, on which the Crusader's less skillful, if more powerful, arm can make no impression.

What we have missed in the last two numbers of the JOURNAL are the bright, spirited sketches of our friend Charles M. Drake, the chronicler of "Wild-cat District"; the poet (not prosaic, yet in prose,)

"Who mindful of the unhonored dead,
Dost in these lines their artless tale relate."

We hope to hear from him again, and that soon; and whether in single tale, or serial

"In linked sweetness long drawn out,"

in prose or poetry, he will always be welcome.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

APPORTIONMENT OF SCHOOL MONEYS.

No question connected with school government has excited more discussion than that of how school moneys shall be apportioned among the school districts in the various counties; and the impossibility of any plan being adopted by the Legislature which shall give equal satisfaction to all the counties of the State, is fully established.

If any doubt remained upon this point, it ought to have been removed by the discussion of the subject at the late Convention of County Superintendents.

Already delegations have appeared before the Committees on Education of the present Legislature, asking that the plan as now established by law be changed.

The proposed changes do not at all conform to those recommended by the committee of the late convention, and are flatly opposed by those school people in other counties, to whom some members of the committees have written for an expression of opinion concerning them.

Newspapers from at least two counties have reached the Superintendent's office, containing editorials (one of them a column in length) opposing bitterly the plan proposed to the convention by its committee.

The Superintendent of Public Instruction has, in view of all this, submitted to

the committee the proposition, that each county shall apportion its *own* money among its *own* districts in accordance with a plan of its *own*, adopted by its *own* County Board of Education, and approved by its *own* Board of Supervisors—a plan which shall suit its *own* peculiar conditions. If any dissatisfaction shall then arise in any county with the plan of apportionment, the quarrel will be its *own*, and the Legislature will not at each session be importuned to change a general law to meet the particular case of this or that county.

The Superintendent of Public Instruction urgently requests that any one to whom this item shall come, who can see any objection to the plan proposed, shall immediately communicate the same to him, or to some member of the Committee on Education of either House, or “forever after hold his peace.”

The proposed plan is in accordance with the spirit of the new Constitution. The matter of text-books, library books, course of study, examination of teachers, have all been relegated to the counties, and certainly each county should be permitted to distribute its own money among its own districts. What do you all think of it?

SALARIES OF COUNTY SUPERINTENDENTS.

This subject is receiving fair and candid consideration at the hands of the Committees on County Governments of both the Senate and the Assembly, and that is all that can be asked, for such consideration can only result in justice being done.

It is confidently believed that the reports of the committees will be satisfactory to our brother superintendents throughout the State, and to the friends of public education generally.

STATE BOARD OF EDUCATION.

A meeting of the State Board of Education was held in the office of the Superintendent of Public Instruction on Thursday, January 27th, 1881, at 11 o'clock A. M., a full Board being present.

The minutes of last meeting were read and approved.

Educational Diplomas were granted to Mrs. L. F. Fowler, Alameda County; Emma J. Powell, Florence Smith, A. L. Wyllie, Calaveras County; Mrs. H. M. Mills, Ellis J. Root, Miss R. C. Willard, Contra Costa County; John Frace, Eldorado County; John Ashton, S. C. Boon, Fred. H. Gibson, Alta C. Phelps, Geo. W. Rager, Humboldt County; Chas. L. Colvin, Marin County; Wm. K. Dillingham, Thos. Filben, Jos. M. Haskins, Etta Leminger, C. J. Sullivan, Mendocino County; John A. Henderson, Mary Ragsdale, Merced County; Flora Conover, Monterey County; Mrs. E. E. Mitchell, Napa County; Lillian S. Weldon, Plumas County; Carrie W. Roberts, Sacramento City; Joseph G. Martin, San Diego County; Celia Jacobs, Emma F. Kraus, Mrs. J. E. Meeker, Anna J. Roche, San Francisco; F. M. Furman, Augusta Hinds, San Joaquin County; J. L. Rains, C. H. Woods, San Louis Obispo; Rachel Bartholomew, San Mateo; Josie W. Armstrong, Katie Blythe, Susie Crenshaw, Josephine Rockford, S. K. Reynolds, Mary E. Williams, Santa Clara; Mrs. W. S. Leake, Adele C. Moulty, Calvin B. Webster, Solano County; Fanny L. Atterbury, Sonoma County; Priscilla Edwards, Stanislaus County; Emma L. Jory, Arthur Hewett, Sutter

County; Susie T. Leonard, S. A. Styles, Tehama County; C. C. Ortega, D. M. Ortega, Ada Wade, Tuolumne County; Allen McLean, Ventura County; J. J. McConnell, Yolo County.

Several applications for Educational Diplomas were laid over to a future meeting on account of informality.

Life Diplomas were granted to R. E. Corinne, Amador County; Mary J. White, N. B. Coffman, Butte County; H. J. Tillotson, Mary T. Mott, Contra Costa County, Eliz. Hall, Calaveras County; John Lorain, Eldorado County, F. S. Wallace, Kern County; James S. Hunter, Augusta Bainbridge, Mendocino County; J. B. Hankenson, Robt. Furlong, A. D. Butler, Napa County; Kate O'Brien, San Francisco; Lillie Ashe, Kate E. Hopkins, San Joaquin County; Katie Blythe, Sallie B. Burt, Metta G. Buzzo, Mary E. Williams, Santa Clara County; L. M. Dennis, Maggie Drew, James M. Gleaves, Shasta County; Lucy Gilman, Solano County; Lester Stevens, Sonoma County; Nathaniel W. Davis, Stanislaus County; Samuel H. Raub, Sutter County; Hattie Williams, Tulare County; Richard Morgan, Tuolumne County; Elizah Boor, Ventura County; Miss J. L. Hagen, Yolo County; Geo. N. Sanborn, Sonoma County.

The applications of G. W. Johnson, J. M. Curragh, and Mrs. Sara White for renewal of Educational Diplomas were granted, and the Superintendent authorized to indorse them. The following resolution was then unanimously adopted:

Resolved, That hereafter no Educational Diplomas will be renewed unless the application shall be accompanied by a resolution of some local board recommending the same, similar in form and substance to the resolution required for the issuing of diplomas.

The following resolution and preamble were unanimously adopted:

WHEREAS, In the records of the State Board of Education held May 21st, 1869, the name of Miss Fannie E. Bennett was through some cause omitted from the list of those to whom Life Diplomas were issued; and, WHEREAS, Miss Bennett has presented her diploma duly signed to this Board, and asked that it be made a matter of record in the proper books; therefore,

Resolved, That the Secretary duly record the fact that Miss Fannie E. Bennett is a holder of a Life Diploma legally and duly issued and signed.

The communications of Wm. Kermode were laid upon the table, the Board having no jurisdiction in the matter.

Communications from various publishing houses in regard to library books were referred to the committee having that matter in hand.

The following resolution was unanimously adopted:

Resolved, That we, the State Board of Education, heartily indorse "Bancroft's Chart of Geographical Definitions," and recommend the same to district boards as being a desirable addition to their school apparatus.

The board then adjourned subject to a call of the secretary.

OFFICE OF SUPERINTENDENT OF PUBLIC SCHOOLS, }
 _____ County, Cal., January 22nd, 1881. }

HON. F. M. CAMPBELL, *State Superintendent of Public Instruction:*

DEAR SIR—I find that it has been our County Auditor's custom for some years to deduct the amount of the State and county school tax (estimated) from the gross amount of taxes collected, and to allow the Tax Collector his commission on the balance only, as provided by law. Instead, however, of keeping this estimated school fund separate, he has apportioned the entire amount of taxes collected, less

commission, to the several funds, schools funds included, in proportion to the tax levy for the several funds, thus giving the other funds the benefit of the free collection of school taxes.

Presuming that our Auditor has heretofore settled with the Controller on this basis, I would suggest the propriety of asking the Controller whether the same method is pursued in his office, with reference to the State school funds. The amount involved would be considerable; and while the law does not, perhaps, say just how the money shall be apportioned, I think that there can be no doubt that the intention was to give the school fund alone the benefit of free collection.

Yours very truly,

_____, Superintendent.

CONTROLLER'S DEPARTMENT,
Sacramento, Cal., January 26th, 1881. }

HON. F. M. CAMPBELL, *State Superintendent of Public Instruction*:

DEAR SIR—In reply to your favor inclosing communication from _____, Superintendent of Public Schools, _____ County, relative to school moneys and Tax Collector's commission, I have to say, that in adjusting settlements with the several counties, we first ascertain the amount of school money, which amount is deducted from the gross collections, and set apart as the apportionment to the school fund. The balance, after deducting commissions allowed by law, is apportioned to the several funds *other than school*.

Very truly yours,

D. M. KENFIELD, Controller.

_____, "A" County, January 24th, 1881.

HON. F. M. CAMPBELL, *State Superintendent of Public Instruction*:

DEAR SIR—About nine years ago a new school district called "X" School District was formed in this county, and a school kept as required by secs. 1580 and 1581. An election was called to levy a school tax to build a school-house, and carried, and the tax was collected and paid to the County Treasurer. The residents of the district could not agree to authorize the trustees to locate and build a school-house. The school district lies along the county line between "A" County and "B" County. The trustees of this district ("X" District, "A" County) made arrangements with the trustees of "Y" District, "B" County, under sec. 1617, subdivision 15, of art. vii, to send the children to their school, paying their proportion for maintaining the school in proportion to the number of scholars attending school. That arrangement has been carried on to the satisfaction of the residents of "X" district up to the present time, the superintendent apportioning the school moneys the same as to other districts. When the present school superintendent of this ("A") county came into office, he refused to apportion any school money to the district, upon the ground that a school had not been maintained *within the district* for six months, under sec. 1859.

Now the question arises, is the County Superintendent right in denying this ("X") district the apportionment of school moneys, by sustaining the law to compel the trustees to maintain a school *within the district*, when the law only says a school shall be maintained for at least six months?

We, as trustees, maintain that we have maintained a school on an average of nine months of each year, by maintaining a school under the provisions of sec. 1617, subdivision 15, by making the arrangements as aforesaid, to the full satisfaction of the residents of "X" school district in "A" County.

The school in "Y" school district in "B" County is within a reasonable distance of a majority of the residences of the children of "X" school district in "A" County. I am directed by the trustees to write to you for your opinion in the matter. Owing to the fact that the district is situated peculiarly, a good many of the residents have no families and have no interest in school matters; and a school-house cannot be erected on a public road without its being on the extreme side of the district, so that it would be inaccessible for children from the other side. There are twenty-four census children in the district. Another thing is, if the district should be merged in the surrounding districts, they would be compelled to go some three miles or more to school. If the school superintendent is correct in the construction of the law, it follows that subdivision 15 of sec. 1617 confers no power on the Board of Trustees to make arrangements, etc.

Your opinion in the matter is asked, for the reason that it seems, under the peculiar circumstances of the case, residents of the district are compelled to pay taxes for school purposes, and get no benefit, and have to send their children to other districts and pay for their school in addition to paying their taxes. Please give us at your earliest convenience your opinion in this matter, for which we will be under many obligations.

Very truly yours,

———, Trustee of "X" School District.

DEPARTMENT OF PUBLIC INSTRUCTION, }
Sacramento, January 29th, 1881. }

DEAR SIR—Yours of the 24th inst. is at hand. In my opinion the County Superintendent is entirely correct in the position which he has taken.

I find by reference to the records of the office, that my predecessor gave the following opinion on the same question, in answer to a letter from your Board of Trustees—you being at that time a member of the board:

"SACRAMENTO, July 15th, 1878

To the Trustees of ——— School District, ——— County:

"GENTLEMEN—Your letter of July 13th is before me. I am of the opinion that the law does not authorize, but on the contrary prohibits, an apportionment to a district which does not maintain a school within its own limits. (See sec. 1859 of the School Law.)

"If I rightly understand your statement, you have been drawing money illegally for twelve years. A union school cannot exist without special legislation; and, moreover, on the theory that the two districts were maintaining a union school, they would have been entitled jointly to but one teacher and \$500. (See sec. 1858, subdivision 1-3.)

"Sec. 1617, art. xv, empowers school trustees to make arrangements for the special accommodation of such children as live at a greater distance from their own than from a neighboring district school-house—not for the wholesale transfer of a district's pupils and apportionment.

"The object of district organization being manifestly the maintenance of a school within its own limits, provision is made in sec. 1545 for the exercise of the superintendent's power in providing for one in case the trustees fail to do so.

"Any school district not maintaining a legal school during six months of the year next preceding, forfeits its apportionment; or not complying with any or all of the provisions of secs. 1859 and 1860; and the money so forfeited must be apportioned according to subdivision 4, sec. 1858, Political Code.

Very respectfully yours,

E. S. CARR, Superintendent of Public Instruction."

"SACRAMENTO, July 16th, 1878.

Having read and examined the foregoing opinion of Hon. E. S. Carr, Superintendent of Public Instruction, I fully concur in the same.

JO. HAMILTON, Attorney-General.

By MATT. F. JOHNSON, Deputy."

I have given the foregoing letters thus in full, because it may be that the originals have been mislaid and are not at your hand.

I have but little to add. It would seem to me, if one school was found to be sufficient, the trustees should have taken steps to organize a union district. If any inconvenience shall now result, perhaps the advantage which has so long been enjoyed of drawing money for *two* districts, while being *practically* but one, will be considered a compensation.

I laid the matter before Attorney-General Hart to-day, and he sustained the opinion of Dr. E. S. Carr, Deputy Attorney-General Johnson, and myself, that Superintendent ——— did right in withholding the apportionment from "X" School District, "A" County.

I am very truly yours,

FRED. M. CAMPBELL,

Superintendent of Public Instruction.

P. S.—The way to get a *judicial* decision is, of course, to *mandamus* the Superintendent. The foregoing are not *decisions*, but merely opinions.

F. M. C.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN FEBRUARY, 1881.—*Mercury* is an evening star, setting on the 10th at 6 h. 37 m. P. M.; on the 20th at 7 h. 33 m. P. M., and on the 25th at 7 h. 38 m. P. M. He is at his greatest eastern elongation on the 23rd, and can then be seen by the naked eye. If our readers will closely scan the western heavens from the 20th to the end of the month, just after sunset, they may see this planet perhaps for the first time. *Venus* is an evening star, setting on the 10th at 10 h. 1 m. P. M.; on the 20th at 10 h. 11 m. P. M., and on the last day of the month at 10 h. 25 m. P. M. She is near the moon on the 2nd, and at her greatest eastern elongation on the 20th. *Mars* is a morning star, rising throughout the month about one hour before the sun. He is near the moon on the 25th. *Jupiter* is an evening star, setting on the 10th at 10 h. 42 m. P. M.; on the 20th at 10 h. 11 m. P. M., and on the last day at 9 h. 40 m. P. M. He is near the moon on the 3rd. *Saturn* sets on the 10th at 11 h. 21 m. P. M.; on the 20th at 10 h. 42 m. P. M., and on the last day at 10 h. 8 m. P. M. He is near the moon on the 4th. It will be seen from the foregoing that four planets will be visible in the west during the last ten days of the month; thus affording a spectacle as beautiful as it is rare. On the 3rd of March, the Moon, Jupiter, Venus and Saturn will be in close proximity.

AN analysis has been made of the soil of a cemetery in which no interment has been made for thirty years, and the products of animal decomposition are found to be still present.

SAMPLES of hard wood lumber made from common wheat straw, have lately been exhibited in Illinois. The wood has all the polish and finish of the hardest black walnut and mahogany.

WICKS made of spun glass have been tried in lamps, and it is said they do very well. It is stated that they supply the petroleum, oil, or alcohol to the flame with more steadiness than the ordinary wick; that they secure a clear and pure light at a less expense of fuel, and that they diminish the usual unpleasant odor.

THE result of an investigation by a government commission in Prussia to ascertain the best kind of ink to be used for official purposes has just been published. The objection to aniline ink is that it can be easily washed away by preparations containing chlorine. Alizari, or Adrianople red, imparts considerable permanence to the ink of which it forms an ingredient. The best ink of all, however, is that made from gall-nuts, and it is the one recommended for writings which are intended to withstand time.

THE skin-furrows at the tips of the fingers vary in different individuals. Henry Faulds, of Tokio, Japan, writes to *Nature* that he has carefully studied them, and that a knowledge of them may doubtless be used in ethnological classifications; if so, then the finger-marks preserved on ancient pottery are destined to reveal traces of nationality, while in modern trials the tell-tale impressions of soiled or bloody fingers bid fair to become witnesses not to be despised.

A KEEN observer, writing to *Nature* about the soaring of the pelican, the adjutant, the vulture, and other large birds, weighing from twenty to forty pounds each, says they rise by flapping the wings vigorously, and, when up from one to two hundred feet, begin to soar in large circular sweeps, the wings being rigidly extended, and the whole body otherwise quite motionless. Thus they rise as high as 8,000 feet. They cannot soar when there is no wind. There is, too, an invariable drift to leeward. In circling *with* the wind the bird slightly falls, but when it wheels round to face it, it is borne up like a kite to a higher altitude, but loses position laterally.

THE smoke of London has become such a nuisance that inventors and practical men of science are, at last, taking hold of the matter in earnest. Dr. C. W. Siemens, the distinguished electrician, and the inventor in 1862 of the so-called "regenerative gas-furnace," which has worked such a change in the manufacturing use of fuel, has contrived a simple grate, which accomplishes the purpose by using jets of gas, playing upon a mass of coke in the grate. He considers the use of raw coal essentially "barbarous," and shows that a far more economical and perfectly smokeless fire is obtained by first decomposing the bituminous coal into gas and coke, and then burning the products, under properly regulated conditions. But gas in London costs only 87 cents a thousand feet, so that his figures will hardly apply in this country. Scott Moncrieff proposes a slightly different plan—that the gas companies should only take from the coal they use about one-third of the gas they now get from it. The coke left would then be, he asserts, quite as valuable a fuel as the raw coal itself, and would give a smokeless fire. But the gas companies would have to handle three times as much coal as now.

COMETS continue to abound; for the most part "Manx comets," as a lady we know calls them, because they have no tails. Penule's comet, however, which was discovered at Copenhagen, on December 16th, does not quite fairly come under the category, for it had *two* tails for a few days—one directed, as usual, *from* the sun, and the other *toward* it. The first was pretty nearly in line with the sun; but the other was inclined some 20° toward the north, and was the brighter of the two, though both were so faint as to be seen only by pretty close attention, with a 9½-inch aperture. They were each about 30' long. Cooper's comet discovered in England on December 21st, but not announced until the 27th, is a very insignificant little affair, though it passes very near the earth, in an orbit resembling that of the lost comet of Biela. Swift's comet has disappeared. It is now quite certain that it belongs to the so-called Jupiter family of comets. It has a period of about five and a half years, and was observed eleven years ago, when discovered by Temple, of Marseilles.

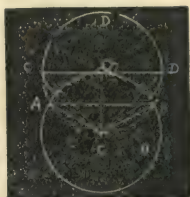
PROGRESS IN PHOTOGRAPHY.—“Some Recent Advances in Photography,” is the subject of a paper recently read before the Society of Arts by Captain Abney, R. E., F. R. S., in which reference was made to the more important improvements in the art that have been put in practice since 1875. A new negative process, called the gelatino-bromide process, offers decided advantages. It consists in the use of a gelatine emulsion of silver bromide for the sensitive surface. With a plate thus prepared, a photograph may now be taken in one second of time which it formerly took thirty seconds to secure; and a plate can be prepared which needs an exposure of only one sixtieth of a second, when a view is fairly lighted, to secure a soft and harmonious negative. It makes instantaneous views possible under circumstances which were impossible; in illustration of which the speaker exhibited a view in which the shadow and reflection of a swallow passing in the air over a pond were perfectly represented. The plates and development of pictures taken by this process are perfectly clean. The plates, moreover, have the quality of preserving the impressed image for a long time after they have been exposed and before it has been developed. The chief disadvantage of the process is that the photographer using it has very little power to give local intensity to his picture. Till lately, a red light had to be employed in the developing-room and this was painful to the operator. The difficulty has been obviated by adding iodide of silver to the emulsion in the proportion of one part of iodide to eight of the bromide, when an orange light can be used with impunity, and the shadows are given a wonderful clearness. When a collodion emulsion is adapted to a flexible support and used for the negatives, the operator is able to do away with glass and its weight, and may store rolls of sensitive material in the camera itself. Then, by turning a screw, he may place fresh portions of the band in a condition for exposure. After exposure, paper prepared with this emulsion may be moistened with turpentine, and the film bearing the image, almost free from weight and bulk, may be stripped off. To print from these flimsy negatives, it is only necessary to place them on glass. When a flexible support shall have been introduced for the gelatine emulsion, the negative processes of photography will be almost perfect. With the collodion emulsion, we are able to get a physical condition of the bromide, in which it will answer to the vibration of the rays of the lowest refrangibility. Photographs of the solar spectrum taken on this salt were shown, corresponding to wave-lengths which lie more than three times as far below the red as the distance of the visible spectrum. This process is being applied to the examination of colorless bodies, with a view of obtaining spectroscopic analyses of them. It has been discovered that the photographic image is rendered undevelopable by the action of oxidizing agents, and this alike whether it be produced on a collodion or a gelatine film or on paper. The oxidation of the image goes on also in ordinary atmospheric conditions, more especially under the influence of light, and in it we have a simple explanation of what is known as solarization. A platinum process, in which an image is produced in platinum-black, is about four times as sensitive as the ordinary silver process, and marks the greatest advance in printing that has been made for many years. Another printing process is based on the reduction, by ferrous oxalate, of bromide of silver which has been exposed to light, and was discovered almost simultaneously by Mr. Willis, of England, and Mr. Carey Lea, of Philadelphia. The prints obtained by this process have great permanence, since no organic compound of silver, the great agent of deterioration, is present in them. Mr. Lea has discovered within the last year that the power of development which is shared by most of the organic salts of ferrous oxide is not limited to them, but is possessed also by many of its inorganic compounds. He gives a brief account of his researches in this direction, and of the properties of the different salts of the oxide, in the *American Journal of Science* for June.

UNAVOIDABLY OMITTED.—On account of the length of a number of articles in this issue of the JOURNAL, several book reviews, as well as notices of the February *Scribner*, *St. Nicholas*, and *Popular Science Monthly* were necessarily omitted. The books, including some important works from D. Appleton & Co., and from A. L. Bancroft & Co., will be reviewed in our next number.—[EDITOR JOURNAL,

MATHEMATICS.

THIS department is under the editorial charge of Professor WM. WHITE, to whom all communications relating thereto must be addressed.

I send a solution of Problem 26 of last year, and 34 and 35 in the November JOURNAL. Mr. Sturges' solution of 26 is on a wrong supposition. Even were the supposition correct, his result (97.2732 rods) is wrong. For the area AD BO (Fig. 1)=area of circle minus the double segment AOBC, or its equal, 2 seg. AOB.



$$(1.) \text{ Then } ADBO = 160 - 2 \left(\frac{160}{3} - \frac{R^2}{2} \left\{ \text{Sin. } 120^\circ = \text{Sin. } 60^\circ \right\} \right)$$

$$\text{As the sector } CAOB = \frac{1}{3} \text{ circle } C, \text{ and } \triangle ABC = \frac{R^2 \text{ Sin. } 120^\circ}{2}$$

$$\begin{aligned} ADBO &= \frac{160}{3} + R^2 \text{ Sin. } 60^\circ, \\ &= \frac{160}{3} + \frac{160 \text{ Sin. } 60^\circ}{11} \text{ as } 11 R^2 = 160. \end{aligned}$$

This expression for the required area is simple. The last term of the second number may be computed by logarithms, or by natural numbers. I annex the computation by logarithms.

Log. 160	=2.204120
" Sin. 60°	=9.973531
ac " 11	=9.502850
" $\frac{160 \text{ Sin. } 60^\circ}{11}$	=1.644501
$\frac{160 \text{ Sin. } 60^\circ}{11}$	=44.1063
$\frac{160 \text{ Sin. } 60^\circ}{3}$	=53.3333

Hence, ADBO=97.4396 rods.

The problem as I proposed it—the tethering line wrapping about the circle C—involved the solution of the involute of the circle, for the extremity c of the line O c, will describe such a curve from the point at which the extremity c of the line c O is in contact with the circle C to the point from which the line c O is tangent to C at the point O, where the line is fastened. The simplest method of finding the area of this curve is by means of calculus. First, to find the equation of the curve.

In Figure II, let C, C', C'', etc., be an involute of the circle A, and let C' be any point of the curve. As the curve is generated by the movement of the point at the extremity of a line as it is unwound from the circle, (the line being kept taut) the line unwound at any instant is equal to the arc of the circle, from the origin to the point of the circle to which the line is tangent.



Let a = radius AC

r = radius vector, as C' A

and t = measuring arc to r , as CE

} Fig. 2.

Arc C D = C' D, and Arc C E = C' D — Arc E D.

But arc C E = t , arc C D = $\sqrt{r^2 - a^2}$, and arc E D = arc whose cosine is

$\frac{a}{r}$ (as A D = a , A C' = r , and A C D is right angled at D.) Hence,

$$(2.) \quad t = \frac{\sqrt{r^2 - a^2}}{a} - \cos^{-1} \left(\frac{a}{r} \right) \text{ the polar equation of the curve.}$$

The differential area of a polar curve is $ds = \frac{r^2 dt}{2}$. Substitute in this dt

from (2). Differentiating $t = \frac{\sqrt{r^2 - a^2}}{a} - \cos^{-1} \left(\frac{a}{r} \right)$ we have $dt = \frac{r dr}{a\sqrt{r^2 - a^2}}$

$$- \frac{a dr}{r\sqrt{r^2 - a^2}} = \frac{(r^2 - a^2) dr}{a r \sqrt{r^2 - a^2}} = \frac{\sqrt{r^2 - a^2}}{a r} dr.$$

$$\text{Hence } ds = \frac{\sqrt{r^2 - a^2} r dr}{2a}.$$

Integrating,

$$(3.) \quad s = \int \frac{\sqrt{r^2 - a^2} r dr}{2a} = \frac{(r^2 - a^2)^{3/2}}{6a} = \frac{(r^2 - a^2)}{6a} \sqrt{r^2 - a^2},$$

(in which $\sqrt{r^2 - a^2}$ = line unwound at any given point).

In this problem (Fig. 1) $\sqrt{r^2 - a^2} = a = cO$ or dO , and (3) becomes

$$s = \frac{a^2}{6} \text{ This includes the portion of the circle}$$

$a C a'$, or $b C b'$

$$(4.) \quad a C c = b C d = \frac{a^2}{6}$$

The required area = semi-circle $O c D$ $d+2$ ($a c C - a C a'$) + triangle $c C d$ — sector $a' C b'$; or, semi-circle $O c D$ $d+2$ ($a C c$) + $\triangle c d C$ — sector $a C b$.

But $\triangle c d C = \frac{c d \times O C}{2} = a^2$. As arc $a O$ = radius, it is the unit

arc = $\frac{180^\circ}{\Pi}$ and $a O b = \frac{360^\circ}{\Delta}$. Making these substitutions in the expression for the area,

$$(5.) \quad \text{Area required} = \frac{160}{2} + \frac{a^2}{3} + a^2 - \left(\frac{a^2 \Pi}{360^\circ} \times \frac{360^\circ}{\Pi} = a^2 \right)$$

$$= \frac{160}{2} + \frac{a^2}{3}. \quad \text{But } a^2 \Pi = 160 \quad \text{hence,}$$

$$(6.) \quad = \frac{160}{2} + \frac{160}{3 \Pi}. \quad \text{Computed by logarithms.}$$

Log. 160 = 2.204120

$a c$ " 3 = 9.522879

" " Π = 9.502850

" $\frac{160}{3 \Pi}$ = 1.229849

(2.) seconds' pendulum at any place, $L=3.26058$ ft.—.008318 cosine $2x$, where x =the latitude. Taking the latitude of Vallejo as $38^{\circ}-5'$, we find $l=39.103$ in.+

$$\text{Log. } \frac{160}{311} = 16.9765$$

$$160 \div 2 = 80.$$

Area required = 96.9765 rods.

When the formula Eq. (3) is known, the solution is as easy as under the first supposition.

PROBLEM 34.—As the thickness of the stone is uniform, one factor of the several solids will be constant, and the solidities will vary as does the surface of one side of the stone.

Let the circle AAA represent the whole stone, BBB the portion left after A's share is ground off, and CCC the share of C. But $CCC = \frac{1}{2}$, $BBB = \frac{1}{3}$ AAA, and $BBB = \frac{2}{3}$ AAA. As the solidity varies as the area of the circles, and the dimensions as the square root of the areas, we have the proportions.



$$CC: BB:: \sqrt{CCC}: \sqrt{BBB}:: \sqrt{1}: \sqrt{2}$$

$$CC: AA:: \sqrt{CCC}: \sqrt{AAA}:: \sqrt{1}: \sqrt{3}. \quad \text{But } AA=60 \text{ in.} \quad \text{Hence}$$

$$CC = \frac{60 \text{ in}}{\sqrt{3}} = \frac{60 \text{ in} \times \sqrt{3}}{3} = 20 \text{ in} \sqrt{3} = 20 \times 1.7320508 = 34.641016 \text{ in.}$$

$$BB: AA:: \sqrt{BBB}: \sqrt{AAA}:: \sqrt{2}: \sqrt{3}. \quad \text{But as } AA=60 \text{ in.}$$

$$BB = \frac{60 \text{ in} \sqrt{2}}{\sqrt{3}} = \frac{60 \text{ in} \sqrt{2 \times 3}}{3} = 20 \text{ in} \sqrt{6} = 20 \text{ in} \times 2.4494897 = 48.989794 \text{ in.}$$

$$\text{Then A will grind off } \frac{60 - 48.989794}{2} = 5.505103 \text{ in.}$$

$$B \quad " \quad " \quad " \quad \frac{48.989794 - 34.641016}{2} = 7.174389 \text{ in.}$$

$$\text{And C has left } \frac{34.641016}{2} = 17.320508 \text{ in. in radius.}$$

PROBLEM 35.—With the given data, the calculations must be made as if the pendulum were simple.

To find the length of a pendulum, the rate of vibration of which is known,

(1.) the formula is $l=L \left(\frac{3600}{n} \right)^2$ in which L is the simple seconds' pen-

dulum, and n the number of vibrations per hour. To find the length of the

(2.) seconds' pendulum at any place, $L=3.26058$ ft.—.008318 cosine $2x$, where x =the latitude. Taking the latitude of Vallejo as $38^{\circ}-5'$, we find $l=39.103$ in.

Substitute in (1) this value of L , and for n its value, 3585, we have $l=$

$$(3.) \quad L \left(\frac{3600}{3585} \right)^2 = L \left(\frac{240}{239} \right)^2 \text{ whence } l=39.431 + \text{length of given pendulum.}$$

To find the additional weight, x at a distance l' from the axis of sus-

$$(4.) \text{ pension to cause the pendulum to vibrate seconds, } x = \frac{w (l+L) (l-L)}{(L+l') (L-l')}$$

in which w is the weight of the pendulum, (in this case it must be of the bob, as no weight is given for the pendulum bar) l is the length of the given pendulum, L the length of the seconds pendulum, and l' the distance of x from the axis of suspension. Making the necessary substitutions,

$$(5.) \quad x = \frac{12^{\text{lbs.}} \cdot 76,534.328}{58,206.20} = 2588 \text{ lbs.}$$

In this expression (5.) l' was taken at $39.103-20$. Had it been taken $39.431-20$, the value of x would be larger.

I would repropose Problem 35 with the following additional data: Give the bob a definite figure, (say that of a circle 6 inches diameter of uniform thickness and density); give the connecting rod a weight, (say one pound, with uniform density and size in the direction of its length); the rest as before, with the same elements to be calculated.

A. F. PARSONS.

NEWS RECORD.

OUR record closes on JANUARY 29th.

Foreign and Domestic.

The telegraph brings intelligence of terrific storms in the Atlantic States and Western Europe. All communications have been interrupted, the telegraph wires are down, trade is entirely suspended, and great suffering, and even death, have resulted from the intense cold. How enviable is our fortune on this coast! The thermometer has nowhere stood below the freezing point; the rains have been abundant, and the intervening periods of sunshine warm and pleasant.

General Goff, the new Secretary, assumed charge of the Navy Department.

William B. Wood took his place in the United States Supreme Court.

The Republican caucus at Indianapolis unanimously nominated General Harrison for United States Senator.

The Republican caucus at Columbus, O., last night, nominated John Sherman for United States Senator by acclamation.

General Hawley was elected United States Senator in Connecticut yesterday, Conger in Michigan, Eugene Hale in Maine, Oliver in Pennsylvania, Platt in New York, and Bayard in Delaware.

It is reported that Greece intends attacking Turkey at the end of January.

The Chileans, after a pitched battle with the Peruvians, in which the latter were completely routed, captured Lima, the capital city and metropolis of Peru.

The Western Union and the American Union Telegraph Companies have consolidated. The new organization will have a capital of \$80,000,000.

The Nevada Legislature on Tuesday elected James G. Fair to the United States Senate.

General John F. Miller was elected United States Senator from California.

Personal.

Captain Miles Standish was shaken by the hand, a few days since, by a Maine correspondent of the *Tribune*, who describes him as a man about forty, a "chunky, blue-eyed, rosy-faced, genial fellow, who is waiting for a new schooner building for him here. He is a lineal descendant of the great original. He has a nephew of the same stock, who being named after the great man of Plymouth Rock also, spells his name 'Myles,' like his ancestor. Either this Captain Miles, or one of the same name, (I think this one, though) went to a public entertainment here two or three years ago. He sat down side by side with John Alden, from somewhere up near Augusta, who was a lineal descendant of the original John. The two

men did not know each other, but a mutual friend introduced them.

The late Professor James C. Watson, of Wisconsin, left \$60,000 to the National Academy of Sciences of the United States, excepting the sum of \$3,000, and \$200 annuity, which is set apart for the support of his wife, and \$150 annuity to his mother. The Madison (Wisconsin) *Journal*, says: "Mrs. Watson is possessed of a considerable property in her own name, which renders her wholly independent of her husband's estate, and it has long been the announced purpose of each, having no children, to donate their respective belongings, after death, to the aid of science."

Judge Levi Parsons, who has just given \$50,000 to Union College for the foundation of thirteen scholarships, is a gentleman well known in Wall Street and at the Union Club. He is a connoisseur in art, and possesses some of the finest specimens of china in this country. A wealthy man when he returned to this State from California, he has, within the past few years, added largely to his fortune by successful operations in stocks. The interest of the \$50,000, only, is to be used for the support of scholarships, two of which are to be of the value of \$300 each, three of \$200, and eight of \$150. The residue is to be devoted to the assistance of worthy students of Union College who may need and deserve aid in the prosecution of their studies.—*Bazar*.

The total of the late Samuel Williston's gifts to the Williston Seminary, at East Hampton, Massachusetts, will amount to \$850,000 when the provisions of the will are fully carried out.

Mr. Herbert Spencer is about to set out on a "philosophical tour of the world"—whatever that may mean—with, perhaps, Mr. Huxley for a companion.

Mr. J. W. Mackey, of California, has intimated his intention of giving \$50,000 to Bowdoin College; and Mrs. Stone, of Malden, has just given \$5,000 in addition to large benefactions. We wonder why some of these men, like Mr. Mackey or Judge Parsons, who made their money in California, do not endow, or at least, create a few scholarships for the University of this State. In contrast with their conduct, that of Michael Reese, whom they unanimously denounced as an "old skinflint," appears generous, even princely.

Pope Leo is said to be seriously ill, suffering from difficulty of breathing, compelled to forego his pleasure in his garden, and to stay in bed a good part of the day.

A. S. Logan, a clerk in the Interior Department, is a lineal descendant of the

celebrated Chief Logan, of the Indian Six Nations.

A lady is at the head of the Tennessee State Library, Mrs. Hatton, and she and her daughter keep its twenty thousand volumes in useful order.

The Pope, who does not approve of the conduct of the Archbishop of Cashel and the other Irish bishops and priests in the troubles of the Green Isle, recently received a conciliatory contribution from them of Peter's-pence, Monsignor Macchi remarking that no Irish deputation had ever given so largely before. "Of course," said the Pope, "if they don't pay their rents, they must do something with their money."

Epes Sargent, who died a few days since at the age of sixty-eight, had devoted his life to literature. While a scholar in the Boston Latin School, he wrote for the *Literary Journal*, conducted by himself and other boys of the school. At Harvard, he wrote for his brother's paper, the *Collegian*. Afterward, he was editorially connected with the *Daily Advertiser*, the *Atlas*, and the *Transcript*, of Boston, and for awhile with the *New York Mirror*. He was a most industrious man, and did his work thoroughly well. Latterly, he devoted himself to writing school-books, in which he was successful, and by which he accumulated a modest fortune. His genial and refined manners made him a social favorite everywhere, and his death will be lamented by all who knew him. The last literary work on which he was engaged was the editing of *Harper's Cyclopaedia of English and American Poetry*, which was completed shortly before his death, and which will be issued in a few weeks by Harper & Brothers.

It is rumored that Lord Wentworth, Byron's grandson, who last year jilted Dudu Fletcher, is to marry next spring Miss Stuart-Wortley, the sister of the gentleman who recently married Tom Trollope's daughter. It is understood that Lord Wentworth has been divorced from one wife.

The Hon. John G. Palfrey, father of Emily Palfrey, the poet, was the first to urge in Congress the two and three cent rates of postage. Sir Rowland Hill was the first to do a similar work for England, and when penny postage became a fixed fact in the snug little isle, a national subscription of sixty-five thousand dollars was presented to him, afterward followed by a grant of a hundred thousand dollars, knighthood, and a grave in Westminster Abbey.

Professor Mommsen, the historian, has received one hundred and six thousand marks (about twenty-five thousand dollars) from his countrymen, ostensibly in recognition of

his sixty-fourth birthday, but really in indemnification of the great loss he suffered in the burning of his library, last year.

Prof. Max Muller will give us this month a fresh handful of "Chips from a German Workshop." They are good "chips" to feed the fires of thought.

Mr. Frank Buckland, the English naturalist-author is dead. He was one of the best and most genial expounders of natural history in its varied forms.

Prof. Huxley has been appointed Inspector-General of the Fisheries.

Dr. Arthur Standing, a young English physician at Pernambuco, caused himself to be bitten by a rattlesnake in order to discover or test an antidote. Fortunately his experiment was successful.

Garibaldi is apparently entirely broken down in health, being unable to leave his bed.

General William B. Hazen has been appointed Chief Signal Officer of the Army.

Educational.

The ninth report of the Superintendent of Public Instruction, for the school year ending June 30th, 1880, has been received and is before us. It is a volume of 183 pages and contains much valuable statistical information, many interesting recommendations by the State Superintendent, and reports from the County Superintendents.

We learn that the total number of census children in the State is 215,978, a decrease of 426 since 1879. Of this number, 158,885 attend the public schools. The daily attendance at the public schools was 100,966. The whole number of children in the State, below 17 years of age, is 310,058. There are 2,063 school districts in California; 1,208 male and 2,387 female teachers.

Our space in this number of the *Journal*, will not permit extracts from the suggestions made by Superintendent Campbell on the various topics presented in the report. We hope in our next number to present some of the more important points.

The head-masterships of the great public schools of Eton and Harrow are worth \$25,000 to \$35,000 a year, and those of Westminster, Winchester, Rugby, Charter House, and Merchant Tailors are worth from \$12,000 to \$20,000 a year, including the spacious abodes attached to them. The heads of college at Oxford and Cambridge do not receive nearly so much. The Master of Trinity College, Cambridge, gets about \$15,000 a year, and the Dean of Christ Church, who is also Dean of the Cathedral, over \$10,000. The next most lucrative po-

sition in Oxford is President of Magdalen, which is worth about \$10,000.

The State of New Jersey offers the sum of twenty dollars to every one of her free public schools, with which to start a library, provided the district raises as much more. Ten dollars is added yearly, upon the same conditions. The sums are small; but they will act as an incentive to the formation of school libraries, and the idea is worthy of emulation.

There is much complaint in Texas because, while Governor Roberts "points with pride" to the cash balance of the state funds he parades, the school system is in the worst possible state. The *Galveston News* declares but few children, but whose parents are both able and willing to pay tuition to institutions, are receiving instruction.

The famous Lowell Institute, of Boston, was founded by John Lowell, in 1836, who left it a legacy of \$250,000, which is said to have trebled in value. Courses on physics, chemistry, botany, zoölogy, mineralogy, literature, natural theology, and such other subjects, "as the wants and taste of the age may demand," are given each winter.

Miss Barbara Scott, who died in Montreal, a few days ago, of cerebral apoplexy, bequeathed \$30,000 to found a chair of civil engineering in the McGill College, \$2,000 for a classical scholarship, to be called the "Barbara Scott Scholarship," and \$2,000 to the building fund of St. Gabriel Church, of Montreal.

A Hebrew College has been established in Cincinnati. This is the third in the United States.

Ohio expended on her public schools last year, \$7,704,448. The number of boys and girls of school age in the State, (four to twenty-one, we suppose) is 1,022,571. The number of school-houses is 12,143; and there are 16,627 teachers.

From information received at the Bureau of Education, it appears that the Ecole Modele, or model school, at Brussels, contains 400 boys, aged from 7 to 14. It is not a free school, the annual tuition fee being 150 francs. There is a Kindergarten attached, where boys from 7 to 5 are received. The regular school has three departments: the primary, consisting of boys from 7 to 9; the intermediate, of boys from 9 to 12, and the highest, of boys from 12 to 15, who are prepared for industrial pursuits. There are 12 classes, each containing about 34 boys. The hours of study are from 8 to 12, and from half-past one to 4 o'clock. Each lesson lasts three-quarters of an hour, and is followed by a quarter of

an hour's recreation, while every Thursday is a half-holiday. Seven hours are devoted each week to gymnastics. No home work is given, and no corporal punishment is allowed. Religious instruction is excluded from the school, as is, also, Euclid and demonstrative geometry. The class-rooms are carefully lighted from the left, and great pains are taken to make them cheerful. Drawing has an important place in the curriculum, and is taught in all classes. Language holds the first place in the list of subjects taught. Grammar is not taught, but translations from Flemish into French, and from French into Flemish are freely practiced, and, as a very important practical aid to correct language, no incomplete sentences are allowed in answering questions.

In Pennsylvania the number of county superintendents is sixty-six. The law establishing the city superintendency was passed in 1867. There are at present twenty-six of these officers, 16,585 schools, 19,305 teachers, and 770,349 pupils.

The National Educational Association will meet, this year, at Atlanta, Georgia, July 19th, 20th and 21st. Hon. James H. Smart, Ex-State Superintendent of Indiana, is the President for 1881. A fine attendance and successful meeting are promised. Can not some arrangements be made to have this Coast represented? It is a shame and a standing reproach that amid the great educational movements of the country so little is heard of California. We are pretentious enough, the whole world knows—always bragging of our magnificent climate, gigantic resources, unsurpassed schools, etc., etc., *ad nauseam*. Is it not about time for us to show ourselves and do some of our talking *away from home*? Here is a chance. This is the time for the Executive Committee of the State Association of Teachers to manifest some sign of existence.

THE NATIONAL EDUCATIONAL FUND.—By the Burnside bill, which passed the United State Senate last week, the net proceeds of the sales of the public lands and the net receipts from the government fees for patents are forever set apart for the education of the people. It provides that the Secretary of the Treasury shall yearly apportion to the several States and Territories and the District of Columbia, upon the basis of the population between the ages of five and twenty years, the net proceeds from the two sources above mentioned, which shall be credited on the books of the Treasury as an educational fund, drawing four per cent. interest per annum. The interest only is to be paid to the uses defined by the bill; two-thirds to be appropriated to the education of all children between six and

sixteen years of age, and the other third to the completion of the endowment of the several State agricultural colleges, established under the Act of 1862, until the amount annually thus accruing to each college shall reach \$30,000, after which the whole income of said fund shall be appropriated to the education of children of the ages above stated. The Secretary of the Treasury is authorized to add to the funds any sums given to the United States for this purpose. A sum not exceeding 50 per centum of the amount received by any State the first year, and not exceeding 10 per centum in any year thereafter, may be applied at discretion to the maintenance of schools for the instruction of teachers of common schools.

It is provided that for the first ten years the apportionment shall be made according to the population of ten years old and upward, who cannot read and write. Of course, as long as the distribution is made on this basis, by far the most of it will go to the Southern States, which in 1870 contained 5,573,646 persons above ten years of age who could not read and write, against 1,941,045 of the same definition in the Northern and Western States. It is noteworthy that the most stalwart advocates of this bill are representatives of the States which will receive least, during the first decade, as Rhode Island, Massachusetts, Vermont, and other Northern and Western States, with comparatively few illiterates.—*Educational Weekly*.

The Department of Superintendence of the National Educational Association will hold its annual meeting at New York, February 8th, 9th and 10th, 1881. There will be an address of welcome by Hon. Stephen A. Walker, President of the New York City Board of Education. The principal addresses are as follows: "The Present Aspect of Public Education in America and Europe," by Wm. T. Harris, L. L. D., St. Louis, Mo.; "The Unification of School Statistics," by Superintendent Andrew J. McMillan, Utica, N. Y.; "Weak Places in our System of Public Instruction," Hon. J. P. Wickersham, State Superintendent Public Instruction, Harrisburg, Pa., Hon. B. G. Northrop, Secretary State Board of Education, Hartford, Conn. "The Conservation of Pedagogic Energy," Charles O. Thompson, Ph. D., Worcester, Mass.; "Our Forests and Our Schools," F. B. Hough, M. D.; "Museum Illustration of Education," Hon. John Eaton, U. S. Commissioner of Education, Washington, D. C.; "Education and Health," Elisha Harris, M. D., Albany, N. Y.; "The Economics of School Administration," Superintendent Andrew J. Rickoff, Cleveland, Ohio; "National Aid to Education," Hon. J. W. Patterson, State Superintendent Schools, Concord, N. Y. The President for 1881 is Hon. A. P. Marble of Worcester, Mass.

The Western Reserve College is to be removed to Cleveland, where it will be united with the Case School of Applied Science, under the name of the Western Reserve University. The citizens of Cleveland will furnish the land, and the new University will start with an endowment of about two millions.

The Royal Library at Berlin contains over eight hundred thousand volumes, and more than fifteen thousand manuscripts. The library is now two hundred and twenty-one years old, and has been just one hundred years in its present building.

Yale's academical department has professorship funds to the amount of \$181,300. The prize and scholarship funds amount to \$162,216. The total income of this department from tuition and all other sources last year was \$135,697; the expenditures were \$132,239.

Nebraska has a new State Superintendent, W. W. W. Jones.

There are 1,037 students in attendance at the various schools and departments of Yale College.

Co-education of the sexes has been successfully tried at Oberlin College for forty-seven years. The girls pursue the same studies as do the boys, and do their work just as well.

Every year the people of Pennsylvania spend the munificent sum of \$5,000,000 for purposes of instruction, *i. e.*, for teachers' salaries alone. The whole number of pupils on the rolls was 937,310, and the average attendance 601,627, or 77 per cent.

The new Mayor of New York, Wm. R. Grace, whose influence, it was feared, would be against the public schools, has most agreeably disappointed the friends of the system. In his inaugural message he takes strong ground in their favor, recommends that be taken to increase school accommodations, and strongly advocates liberal salaries to the teachers.

In a recent address, speaking of the work of the National Bureau of Education, the Commissioner, General Eaton, said:

"Previous to the organization of the Bureau of Education, there was no annual report of national progress. Now we are, year by year, able to tally the growth of education in all the city and State systems, which provide for over 15,000,000 of youth, for whom over \$80,000,000 are yearly expended, and who are taught by over 300,000 teachers; that we can tell any addition or change to the 350 colleges in their permanent and current funds, rising as they do above \$71,000,000; or to their annual benefactions in the last ten years aggregate over \$50,000,000.

Justice Dartt of Weathersfield is the successor of Edward Conant as State Superintendent of the public schools of Vermont.

From Superintendent Von Coelln's report of the Iowa schools for 1880, we learn that there are in that State, 1,162 district townships, 3,192 independent districts, 7,668 sub districts, and 2,209 rooms in graded schools; the average duration of school was 7.4 months; there were 7,254 male teachers at an average salary of \$31.16 per month, and 14,344 females at an average salary of \$26.28 per month. The report also shows that there are 586,456 persons of school age in the State; that the total enrollment in public schools was 426,057, and that the average attendance was 259,836. There were 11,037 school-houses, valued at \$9,243,243.

The next meeting of the Department of Superintendents of the National Educational Association will be held February 9th, 10th, 11th, either in New York or Washington. The President of the Department, A. P. Marble, of Worcester, Mass., is exerting himself to have a good meeting.

H. C. Speer succeeds the Hon. Allen B. Lemmon as Superintendent of Public Instruction in Kansas.

E. O. Vaile, of Chicago, has started at Chicago a neat semi-monthly entitled the *Illinois Schoolmaster*.

The State Normal School opened at San José for the second term of 1880-81 with over 400 pupils.

The schools of Jersey City have been closed on account of scarlet fever.

General Notes.

It is said to be a singular fact that, with the exception of Turkey, every reigning royal family in Europe has some of the blood of Mary Stuart in its veins.

Mr. W. W. Corcoran, the Washington banker has already given away about nine million dollars. Late on the occasion of his birthday fête, the ladies who copy paintings in the art gallery founded by him, sent him the pretty present of a staff of flowers.

The United States Treasury has \$85,000,000 in gold bullion, and \$10,000,000 a month is now to be coined in eagles and half-eagles.

Two canal schemes seem to be well under way. M. De Lesseps says that he has the money all ready for his canal, and that he will open it in 1887. Mr. Thompson has resigned the secretaryship of the navy to accept an office in M. De Lesseps's com-

pany. This canal is to cross the Isthmus of Panama. Another company has been organized, of which General Grant is a member, to build a canal across Nicaragua. This canal will be made up of two branches, joined by lake Nicaragua. It is said that this country is visited now and then by earthquakes, which might damage, if not destroy, the locks.

The first detachment of engineers and workmen will start January 5th to break ground on the Panama Canal.

Only one-tenth of the human body is solid matter. A dead body, weighing 120 pounds, was dried in an oven until all the moisture was expelled, and its weight was reduced to 12 pounds. Egyptian mummies' bodies are thoroughly dried. They weigh usually about seven pounds.

The anchor lost by Columbus' fleet on the 4th of August, 1498, has been dug up in Venezuela, being found buried at a depth of six feet below the surface of the ground, 372 feet from the nearest point of the coast line. The land, it is well known, is gaining upon the sea along the coast of Venezuela, so that where ships once rode at anchor gardens are now planted.

Broadway was illuminated from 14th to 28th Street, the evening of December 20th, for the first time, with electric lights. On the same evening Mr. Edison gave an exhibition for the benefit of the Mayor and Common Council of the city, at Menlo Park, at which time he demonstrated the success of his experiments with the electric light.

All of the readers of the JOURNAL have heard of Disraeli's novel, "Endymion." Some have already read it; more are anxious to do so. The readers will find their enjoyment of it greatly enhanced by the study of the following key to the characters, chiefly furnished by Mr. Louis J. Jennings, the New York *World* correspondent, always bearing in mind that they are not exact portraits, but changed to suit the artistic aim of the author, many of them being composed of the traits of more than one distinguished personage: Endymion Ferrars—Benjamin Disraeli, Lord Beaconsfield; Mira Ferrars (his sister)—Eugenie, Empress of the French; Prince Florestan—traits of Louis Napoleon framed in an outline of the career of Alfonso of Spain; Queen Agripina—in the main Queen Hortense, mother of Louis Napoleon, the name covering an allusion to Queen Isabella II.; Zenobia—a composite of Lady Jersey and Lady Holland; Baron Sergius—Baron Brunnnow, who effected the famous Quadruple Alliance of 1840; Nigel Penruddock—Cardinal Manning, with traits of Cardinal Wiseman; Job Thornberry—Richard Cobden; Sidney Wilton—

Sidney Herbert, Lord Herbert of Lea; Lord Rochampton—Lord Palmerston; Lord Montford—the Earl of Dudley, Lord Eglinton, and Lord Melbourne in one; Mr. Neuchatel—Baron Lionel Rothschild; Adriana—Lady Rosebery, with suggestions of Lady Burdett-Coutts and Miss Alice Rothschild; Mr. Bertie Tremaine—Monckton Milnes, Lord Houghton; Mr. St. Barbe—W. M. Thackeray; Mr. Gushy—Charles Dickens; Vigo, the Tailor—Poole, the tailor, with suggestions of Hudson, the Railway King; Count Ferrol—Prince Bismark; Dr. Comely—Bishop Wilberforce ("Soapy Sam.")

The instantaneous process of photography is meeting with marked success. The medium by which a sensitive or photographic film is produced upon the glass, has been, for a number of years, *collodion*. This is made by dissolving gun cotton in equal portions of alcohol and ether. In this film was formed the bromo-iodide of silver, which was acted upon by the light, when exposed in the camera, and made the picture. The new medium is *gelatine*; it gives a sensitiveness from ten to twenty times greater than collodion. Portraits are made in one or two seconds under a portrait light, and out-of-door pictures in a fraction of a second of time.

The *Charleston News* publishes these happy words as coming from General Lee: "Madam, do not train up your children in hostility to the Government of the United States. Remember we are one country now. Pray, dismiss from your mind all sectional feeling, and bring them up to be, above all, Americans."

It may be remembered that the thousand-dollar prize offered in this country for the best Christmas-card design was won by a woman; and news comes that the five hundred-dollar prize offered in England has been taken by a woman.

The recent census of New Zealand shows that the Maories, or primitive inhabitants, are rapidly decreasing, their number having diminished from 55,334, in 1861, to 43,595. This national decay is said to be due to love of drink, bad food and clothing, neglect of cleanliness, and unwholesome dwellings. The decay of the Hawaiian nation is still more rapid, the number having decreased from 57,125 to 44,088 in twelve years.

In Chicago and San Francisco there is an excess of male population; in New York, Philadelphia, Brooklyn, and Boston there is an excess of females, aggregating 100,942.

There are two kinds of ivy growing in our fields, one of which is poisonous, while the other is perfectly harmless. Many peo-

ple think that ivy never poisons them, and the reason is, they have not come in contact with the poison kind. These two kinds are easily distinguished from each other by their cluster of leaves: the harmless kind having five leaves in a cluster, while the poison kind has only three. Look carefully; if there are three leaves in a cluster, be sure not to touch it. This is the advantage gained by observation; cultivate observation.

The island of Tahiti has been formally annexed to France. It has virtually been a French dependency since 1846.

Saint Gothard tunnel, nearly nine miles in length, is to be lighted by electric lamps.

Professor Morse has just arranged at the Peabody Academy of Science an apparatus by which it is expected that the museum will be heated by making use of the rays of the sun.

The great volcano of the Sandwich Islands, Mauna Loa, is belching forth two torrents of lava, one of which is over

thirty miles in length, from one to two hundred yards wide, and twenty feet deep. The eruption is accompanied by terrific explosions.

It has hitherto been the custom of geographers to give the palm to Borneo as the largest island in the world, but this is decidedly an error. A careful estimate, founded on the most recent maps, shows that New Guinea is considerably the larger, and must for the future be accorded the first place. In shape, this island differs greatly from Borneo, being irregular, and much extended in a north-north-west and south-south-east direction, so that its greatest length is little short of 1,500 miles—a distance as great as the whole width of Australia from Adelaide to Port Darwin, or of Europe from London to Constantinople. Its greatest width is 410 miles; and, omitting the great peninsulas which form its two extremities, the central mass is about 700 miles long, with an average width of 320 miles—a country about the size of the Australian empire, and with the exception of the course of one large river, an absolute blank upon our maps.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

No event of great importance has occurred in this department since the last *Journal* was issued. Superintendent Taylor's report is out, and contains many facts of interest and not a few valuable recommendations. We propose to quote liberally from it in this and succeeding numbers.

In speaking of the schedule of salaries for 1881, in our last issue, we understated the advance in the salaries of primary teachers. We are delighted to make so pleasant a correction. The *minimum* for teachers having five years experience, is \$720 per year; and for those having ten years experience, \$840 per year. This, on the whole, is quite a satisfactory rate, though we still hold to the opinion that some distinction should be made in favor of eighth grade teachers. We understand that the new schedule adds but

\$5,000 per month to the running expenses of the department. However, there will be money enough, so it is confidently stated, to pay all demands.

Early in January a circular was sent from the superintendent's office, ordering a discontinuance of the examination mill in the schools, and directing all reports to parents to be sent quarterly instead of monthly. This was a step forward. A few weeks afterward came another circular, directing the keeping of a daily record, (previously ordered discontinued by the superintendent). This is two steps backward.

The whole number of pupils enrolled in the public schools during the year 1880, was, girls, 18,301; boys, 20,019; total, 38,320. The total number in daily attendance was 28,150.

There are 686 teachers in this city, including 56 principals.

The average monthly salary paid to male teachers is \$105.33, to female teachers 67.86.

There are 2,132 pupils in our schools studying German; 635 study French; 291 study Latin; and 39 study Greek.

ALAMEDA COUNTY.

The close of the year 1880 was marked in a pleasant manner by the graduates of the Oakland High School. At the suggestion of Principal McChesney, representatives of each graduating class, since the organization of the school in 1872, assembled and organized a permanent Alumni Association. In addition to the corps of teachers, nearly all of whom have been in the school since its first term, there were present Superintendent Todd, Professor E. R. Sill, Messrs. Burnham, Sherman, Poston, and members of the Board of Education. A pleasant address from Professor Sill was followed by a banquet. Then Principal McChesney called for reports from each of the classes, beginning with that of '72, represented by Mr. Fred. Button. This class left the High School fifteen strong, but now widely scattered, it could muster but four at the reunion. Its record showed a most pleasing account of useful and happy lives. '73, reported by Mr. Scotchler, was the smallest class that ever left the school, numbering but five and sending but two delegates. Three of its members had attended the University. '74, reported by Miss Millie Shinn, had sent a large delegation to the University, had made more teachers and had more members married than any other. Of its six University graduates, three had been speakers at three successive commencements; twelve had tried the pedagogic chair, and seven had married. '75, represented by Mr. Henderson, had five members present out of seventeen, and reported good progress. The record of '76 was given in a charming poem by Miss Alice Lee, whose closing lines tell the good story:

"And these are the fates and the fortunes
Of the twenty-eight young men and maidens
You have seen that their fates lie in working.

"The girls are all womanly women,

The boys are all men who are manly;
What more can I say to their praising?"

'77 had five out of the original thirteen present; three were in the University. '78 was the only class that had a permanent organization with regular officers and stated meetings. '79's brief career was set forth by Miss Fredrika de Leo de Laguna, in a sparkling paper. The other classes, four in number, were reported by their respective officers, showing in every case an earnestness and improvement on the part of the young gentlemen and young ladies that was greatly gratifying to all who had taken an interest in their progress. After brief speeches by Messrs. Poston, Sherman, Burnham, and Superintendent Todd, this part of the exercises was closed by a fine poem written for the occasion by Miss Millie Shinn.

NEVADA COUNTY.

We have received a full report of the condition of the schools of this county, for the year 1880, made by Superintendent John T. Wickes. We learn from this report that the number of school census children in the county is 5,090. The number of schools, as the basis of apportionment, is 82. The number of organized schools is 78, with 80 teachers, of whom 41 are male and 39 female. But 21 are married. Life diplomas are held by 15, State educational diplomas by 11, certificates of first grade by 31, and 23 hold second grade certificates. Of those actively employed, 19 have had a collegiate education, 22 Normal School training, and 25 have been educated outside the State. Grass Valley and Nevada have educated, in whole or in part, 31; besides many others not actively employed, or who have drifted out elsewhere.

The current expenses foot up about \$68,000. The average time the schools are maintained is near 8.3 months per year. The salaries of the teachers range from \$50 to \$100, averaging about \$72. The pay-roll of the teachers last school year was \$50,419. The salaries of teachers are steadily on the decline. In this report, which is published in full in the *Nevada Daily Transcript*, Superintendent Wickes makes many sensible suggestions, notably on Text-Books, Methods of Teaching, Oral Teaching, and Influence of Education on National Growth.

SOLANO COUNTY.

The "Dixon High School," a private institution, organized some time ago by the Rev. Mr. Simmons, opened on January 3rd with an attendance of sixty pupils. Messrs. A. R. Story and J. T. Wallace are the new proprietors. Mr. Wallace is a member of the County Board of Education, and both gentlemen are teachers of recognized ability, who have taught for a number of years in the public and private schools of Solano County. This school has secured for the department of vocal and instrumental music the services of Miss Lula Evans of Dixon. The skill and marked success of Miss Evans justly entitle her to be ranked among the professional teachers of Solano.

The public school is under the charge of Miss Lizzie Davis of Los Angeles County. This school has poor accommodations and many pupils, hence the work of the teachers, of which there are four, is performed under many disadvantages. That Miss Davis should retain her position for a second year in this school is a decided compliment to her management and discipline.

Miss H. N. Hammond, a former assistant of this school, goes to Michigan this spring. Miss Luna Barnes, also of the same school, has left the fold. She is now the wife of Rev. C. C. Bateman.

Mr. J. M. K. Bateman, formerly of Santa Cruz County, is principal of the schools of Fairfield. Mr. Bateman has given general satisfaction while in this county. He is the first principal, for a number of years, who has remained any length of time in Fairfield. Miss N. F. Watson is the assistant in this school. She has held this position for some time, and is one of the few teachers whose salaries have been raised out of appreciation

for services rendered and as an inducement to remain. The Fairfield school opens the first of March.

Mr. George C. Richards is principal of the Suisun schools, and with his able assistants, Mrs. Hoyt and Miss Essie Smith, is doing lasting work. This school reached a very high standard of proficiency a few years ago, while under the charge of Prof. C. W. Childs, now of the Normal School. Its luster became dimmed after Mr. Childs left, but under the *present* corps of teachers *every* department is so conducted as to bring it back to its former rank as one of the very best in the county. Mr. Richards has been at the head of this school for one and a half years. Mrs. Hoyt has held her present position for six years, and is one whose presence in the school-room is a mental sunshine to her pupils.

The school authorities of Benicia intend to build a new school-house to contain about twelve rooms. It will be two stories high with a basement, and the cost will be from \$15,000 to \$20,000. Owing to the increase of attendance, it is thought that the present force of five teachers will have to be increased, ere the year expires, to seven.

The principal Mr. Lou. Weinman, and vice-principal Mr. Allen P. Sanborn, are young gentlemen raised in Benicia, and both are graduates of St. Augustine's Military College of that city. Mr. Sanborn has also attended the State Normal. Under their charge the schools have been more thoroughly graded and the standard of discipline raised. Personal inquiry among the patrons shows that they appreciate their teachers and the prosperity of their schools.

EXAMINATION QUESTIONS.

In our December number we published an installment of primary-school questions used by teachers of Cambridge, Mass. The following is a continuation of the same:
Name the different things with which people write.

What is the material of your dress? Of your shoes?

How does it look out-of-doors when the sun has set?

Have you been down the harbor? What did you see?

Name the country, state, county, and city in which you live.

What is it to be useful? Selfish? Benevolent!

What does the expression, "lost her self-command," mean?

What was meant by a flock? A drove? A swarm?

What are the sports of the different seasons?

Mention a polite act. Some rude acts. Some kind acts.

What plays do you like best? What books?

Name the primary colors. Which is the prettiest?

How many panes of glass in that window?

Mention some things you like to see or do. Show me on your arm the length of a foot.

How high is that door? How wide is the blackboard?

What is the length of this room? The width? The height?

How many little boys and girls in this school?

How many pupils in all the primary schools of the city or town?

"My eye aches." Why? Would this little marble ache if it were "hit?" Why not?

Where were you last evening? Is there any difference between a house and a home? What?

Of the objects you have seen to-day, which are natural and which are artificial?

Tell the seasons of the year, and some pleasant things of each. Name the months of the year.

If everything you can see were taken out of the school-room, of what would it still be full?

Tell me in inches, as near as you can, the length and width of your desk.

If the sun does not shine in a room until afternoon, which way does the room face?

What do you learn at school besides reading, spelling, number, music, and drawing?

What have you learned to-day? Mention the books you like to read, or have read to you.

Why should you not mark or cut the school-house furniture?

Because you see the sun in the east in morning, and in the west in the afternoon, what does it appear to do?

Why is it well to have music a part of the programme of each day? Calisthenics?

Why are the 22nd of February, the 17th of June, and the 4th of July, holidays?

Give in other words the meaning of the word or phrase that I mention.

What do we call the young of goats? Of the horse? Of the cow? Of the cat?

What makes your father buy food and clothes and nice things for you?

If you were going to Boston, what conveyance would you take? To New York? To Europe?

What things do you see in the summer that you do not see in the winter?

What are the different kinds of articles used in making a house? From what are bricks made? How?

Sometimes a little boy is called Fred Jameson, Junior. Why is he called Junior?

I heard a little boy answering a gentleman, and he said, "Yes, sir." Why did he not say simply, yes?

What work does the sun do? Is it larger or smaller than the earth?

Of what is bread made? Where do potatoes grow? Apples? Strawberries? Blueberries?

What is the difference between the furnace and the register? What is a ventilator?

Describe the United States flag. Do other nations have flags? What flags have you seen?

Where does the moon get its light? Why do we not see the moon in the daytime?

Where did you get your book? Did the man of whom you bought it make it? Who did? Of what?

Spell the names of objects at your right hand. At your left hand. In front of you?

What is meant by grandfather? Granddaughter? Uncle? Aunt? Cousin? Nephew? Niece?

What is the name of the President of the United States? Of the Governor of California?

For what do you come to your school? At what hour ought you to get here? Why should you never be tardy?

General plan of questions suggested by Reading Lessons.—First, attention is called to the picture; second, to the story or subject-matter of the piece; then questions like the following are asked: "Why was the little boy a philosopher?" "Who ever saw any coral?" "Why is the story called a fable?" What is meant by the golden sunset?" etc., etc.

TEST EXERCISES IN SPELLING.

Carrie,	opaque,	marriage,
shuffle,	prefer,	poultice,
forsake,	eager,	social,
bargain,	brooches,	malice,
mortar,	metals,	widow,
limit,	ennoble,	college,
mullein,	minerals,	scholars,
linen,	buttons,	practice,
whisper,	cubical,	livid,
complete,	error,	stairway,
margin,	tough,	laurel,

railroad,	circle,	sardine,	case,	reason,	fifth,
foresail,	pyramid,	through,	February,	Saturday,	fingers,
bride,	giggle,	griddle,	niece,	soles,	grief,
shallow,	miser,	fierce,	knives,	sausage,	gaudy,
piazza,	preacher,	daisy,	psalm,	tight,	gallon,
gallop,	quails,	elm,	ankles,	twenty-one,	hawk,
relic,	vase,	inkstand,	stomach,	uncle,	hammer,
acid,	parlor,	deacon,	Maria,	Wednesday,	jelly,
Cyrus,	quit,	elbows,	verbal,	trimming,	knitting.
absent,	russet,	eaves,		<i>The Primary Teacher.</i>	

BOOK NOTICES.

THE ORTHOEPIST. A Pronouncing Manual.
By Alfred Ayers. Pp: 201. New York:
D. Appleton & Company.

It is a common thing, even among educated people, for familiar words to be mispronounced. Standard dictionaries are accessible, but they are usually too bulky to be of the greatest practical benefit in the direction of pronunciation. This handsome little book contains about three thousand five hundred words that are frequently mispro-

nounced, among them a considerable number of the names of foreign authors, artists, and others of whom mention is often made in books and in the newspapers. It is designed for those who would make their practice in speaking English conform to the best usage. The book is issued in handsome binding, with red edges, and of a size convenient for the pocket. A full description of it is given on advertising page 4 of this number of the JOURNAL.

LITERARY NOTES.

Gen. Grant is writing an article for the February number of the *North American Review* advocating the Nicaragua Canal Scheme. The same number of the *Review* will contain a contribution by Judge Tourgee, author of *The Fool's Errand*, entitled *Aaron's Rod in Politics*, and one by Oliver Wendell Holmes on *The Pulpit and the Pew*."

The *Musical Herald* (Boston) for January is an excellent number. Apart from the regular departments, which are of great importance to musicians, there are note-worthy articles upon Young Voices in Church Service, by Dr. E. Tourjée; Descriptive Music, by Gotthold Carlberg; History of Church Music, by W. F. Apthorp; The Wail and the Wobble, by Louis C. Elson; Music of Ancient Egypt, with illustrations, and many others. The whole is made interesting to the general public as well as to the professional musician.

The February *Atlantic* opens with two chapters of Miss Phelps' admirable serial story, *Friends: A Duet*. William M. Rossetti, in his second paper on Wives of the Poets, tells briefly the story of the wives of La Fontaine, Molière, Racine, Lessing, Burger, Goethe, Schiller, and Heine. Richard T.

Ely has an interesting account of the German Co-operative Credit-Unions. John Fiske asks, Who are the Aryans? Major Ben. Perley Poore continues his authentic and entertaining *Reminiscences of Washington*. Richard Grant White returns to his English tour with an article entitled, *In London Again*.

The *Californian* for February has the following articles, among others: *The Republic of Andora*, by Edward Kirkpatrick; *The Division of the State*, by J. P. Widney; *A China Sea Typhoon*, by Wm. Lawrence Merry; *Taxation in California*, by C. T. Hopkins; *Californian Cradle Song*, by Charles H. Phelps; *A Study of Walt Whitman*, by William Sloane Kennedy; *Alvarado of Madrid*, by Yda Addis; *People I would Like to Endow*, by Martin Kellogg; *Shall we have Free High Schools?* by E. R. Sill.

The February *Harper* is notable for its large number of beautifully illustrated articles. These include *The Gospel History in Italian Painting*, by Henry Van Dyke, Jr.; *The English Lakes and their Genii*, by M. D. Conway; *Pottery in the United States*, by Miss F. E. Fryatt; *The Old New York Volunteer Fire Department*, by G. W. Sheldon; *Literary and Social Boston*, by George P. Lathrop. In addition there are two serials: *Annie*, by Constance Fenimore Woolson; and *A Laodicean*, by Thomas Hardy.

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No. 3

QUALIFICATIONS OF TEACHERS FOR PRIMARY SCHOOLS.

BY PRESIDENT JOHN LE CONTE.

[A Paper read before the State Association of Teachers, December, 1879.]

A T former assemblages of this kind, I have had occasion to call the attention of teachers to the relations between the high schools and the University. To-day I propose to devote a few minutes of your valuable time to the consideration of the "Qualifications of Teachers for Primary Schools."

In behalf of the children of tender age, I wish to urge upon you the supreme importance of higher intellectual qualifications, of more liberal culture, of more profound knowledge, on the part of those who are intrusted with the very responsible duty of imparting instruction to the young. It is not uncommon to hear it said, that he or she will do very well to teach young children, it being assumed that no great degree of knowledge or skill is required to educate children in the primary schools. It seems to me that this is a fundamental error. Indeed, a little reflection must convince every unbiased mind, that it requires more accurate knowledge and higher culture to properly educate the youth of tender years, than it does to instruct the more mature.

Even in the most abstruse branches of human knowledge, it requires a more profound acquaintance with the subject to prepare an elementary work, which will convey an accurate exposition of the matter in hand, than it does to write a

purely technical book. When we deprive ourselves of the symbols and formulæ by which we are kept in the paths of truth and accuracy, nothing but the clearest apprehensions of the subject in its most fundamental aspects, will preserve us from the perils of ambiguity and inaccuracy. As a striking illustration of this truth, we find that it is candidly admitted by two of the most profound English philosophers and mathematicians of the current century—Sir John Herschel and Sir George B. Airy—that, in the preparation of treatises in which the general principles of astronomy are expounded without the use of the usual mathematical appliances, their own physical conceptions of the mechanism of the universe have attained far greater clearness and distinctness. Indeed, it is almost self-evident, that the proper guidance and direction of the dawns of human intelligence, of the beginnings of moral development and the establishment of the foundations of character, require the maturest discrimination, the highest culture, and the purest and noblest inspirations of humanity. It is just at this period of life that the intellectual and moral character of the youth is in the process of growth and development; it is, therefore, evident that it demands the greatest care and the wisest discrimination on the part of the instructor.

In addition to these general considerations, there are many special reasons why the teachers of the young should be endowed with superior intelligence, and be refined by generous culture.

1. The inquisitiveness of the young is proverbial. They ask questions which puzzle the most learned philosophers. In some instances these questions are unanswerable—they transcend the limits of the knowable; but, in most cases, the mind of the youthful questioner can be judiciously led to an intelligent comprehension of the subject. Now, the teacher should know, first, whether the given question is answerable or not; and, second, if answerable, be competent to answer it in a manner comprehensible to the young mind. I fear that this is far from being the case in relation to many of those who have charge of our primary education. I trust I shall be pardoned for deviating from my usual custom, by illustrating this point by a significant anecdote.

A bright and intelligent boy having been informed by his teacher that "heat expands all bodies," impelled by the intuitions of causation and of inductive generalization, promptly supplemented the general law which had been announced to him, by adding, "And that is the reason why the days in summer are longer than those in winter!" But the sequel is the most significant part of the anecdote. The teacher, after adjusting his "cogitative cap," replied with becoming gravity, "I never heard that explanation of the lengthening of the days of summer before, but I expect you are right."

But, all jesting aside, while such irrepressible inquisitiveness on the part of children may frequently be very annoying to the teacher, it ought not to be repressed; but, on the contrary, it should be encouraged and directed into the proper channels by a wise and discriminating judgment. For it is evident, that the embryonic man or woman contains the germs and possibilities of all that he or she may afterward become. The little creature is literally overflowing with natural impulses, which irresistibly urge it to inquire, to examine, to investigate, and thus to gather up new truths. It is obviously wrong to rebuke, or

to attempt to repress these natural aspirations for knowledge. A well-regulated and healthy mind never loses this instinctive longing for new truths; and its manifestation in early life should be cherished as an auspicious harbinger of the future.

2. The imitativeness of young children is no less proverbial than their inquisitiveness. They instinctively imitate older persons, even in the most trifling particulars. Hence, the supreme importance of good models and examples of pure and noble character, among those who are put in charge of the youth of tender years. For, although some persons may essay to sneer at good manners as merely superficial, yet, there is a closer connection between deportment and character than is generally believed. A child learns very early to interpret human character, and to appreciate with almost unerring accuracy the "meaning of the tones of the voice and the expressions of the countenance." Gentleness and kindness secure his pure and childish affections, and beauty and brightness fill his innocent soul with joy and gladness. During the period when the imitative faculty is most active, is the time when language should be learned correctly. Vicious habits of speech, such as slang phrases, provincialisms, etc., are usually acquired from the associations of early childhood, and are seldom perfectly unlearned.

This imitative faculty begins to bud, to blossom, and to bear fruit so early in life, that the parents are, and must necessarily be, the earliest teachers. The instinctive care, and, above all, the inexpressible love of the mother, invests her with a power of molding the intellectual and moral character of the child, which, although universally recognized, is not sufficiently appreciated. Its importance to the future man or woman cannot be exaggerated or overestimated. How supremely important it is, that mothers should be endowed with those natural and acquired graces, both of mind and of heart, which alike adorn and exalt humanity—that they should bring joy and gladness to the household, and manifest those traits of gentleness and tenderness, which are at once the evidences of high intellectual and moral character, and the crowning glory of womanhood! Those who have had the good fortune to experience these benign influences during early life, always treasure them as precious heritages, which alike beautify and sanctify the memories of childhood. Indeed, amid so many perishable and perishing things, the virtuous impressions of the mother's care and love, the source of all which it is delightful to remember, is frequently the only permanent acquisition which can be made. These always linger with us to the brink of the grave.

3. But parental care, with the example and training incident to domestic life, while never ceasing to exercise a powerful influence as long as we live, must gradually relax its dominant control with advancing years. There thus comes a time when the teacher in the primary school must, to some extent, share the responsibility of the parents, in guiding and directing the unfolding faculties of the child. This occurs at a period of life in which the imitative instincts are still so active, that this feature of the child's mind cannot be overlooked in assigning qualifications for a good teacher. I venture to indicate only a few of those qualifications which seem to have an obvious bearing upon

the influence of character and example, on such imitative and impressible beings.

a. The teacher should be a person whose intellectual and moral character is not only above reproach, but it should be such as to command the respect due to the instinctive intuitions of the children, no less than that due to the mature judgments of parents. When it is otherwise, the "smoke and tarnish" of evil example must inevitably soil the pure mind of youth, and leave, in after life, some traces of its impurity.

b. The teacher should be sufficiently imbued with the refinements of intellectual and moral culture, to afford the youthful pupil an example, in deportment and in language, worthy of imitation. Slang phrases or expressions, vulgar provincialisms, and all the protean forms of vicious habits of speech, should never manifest themselves in the school-room. On the contrary, the teacher should always correct and kindly discourage such corruptions of language. In new communities, it is feared that this vice is liable to be underrated in its importance in relation to future character.

c. Lastly—if permitted to tread upon a domain where smoldering embers may be concealed—I should add, that the teacher should not present a physical aspect which shocks the æsthetic sentiments of the young pupils. Do not understand me to intimate, that the teacher should rival, in the lineaments of his or her countenance, the models of Grecian art. On the contrary, there are many so-styled homely persons whose high intellectual attainments and beautiful character illuminate every feature of the face, thereby rendering them not only models worthy of imitation, but investing them with those exalted qualities of mind and heart, which must exercise the most healthy and refining influence on the children. Such persons are always attractive to young children. The likes and antipathies of young pupils are as unerring as the instinctive intuitions of the lower animals. To them the character of the teacher is perfectly transparent. Duplicity, hypocrisy, and the various devices for covering up and concealing the vicious traits of character, are utterly ineffectual in obscuring the penetrating instincts of childhood.

The repulsive countenance of a teacher not only destroys usefulness, but must insensibly impress upon the mind and character of the young child an influence for evil which it is difficult to estimate. The primary school is no place for such a person. The taste and character of the children will certainly be vitiated by such presence, even if the language of instruction is faultless. The little beings are quick in perceiving the almost necessary correlation between the *physique* and the *morale*.

The unfortunate person who is afflicted with stammering, or an impediment of speech due to the existence of hare-lip, is at once recognized as unqualified to become a teacher, because of the inability to communicate knowledge in intelligible terms. But what are we to say of those moral monstrosities, whose very presence is repulsive to childhood, and whose silent and persistent influence chill the æsthetic soul, and repress the childish aspirations for the good and the beautiful? Let us trust that such deformities are rare and exceptional.

In consequence of their more impressible organization, and, perhaps, also from the existence of a naturally higher and more delicate appreciation of such influences, girls are, as a general rule, more susceptible to imitation and æsthetic impressions than boys. This physiological or psychological feature in young females cannot be overlooked in assigning qualifications for their teachers. With them, vicious traits of character are most potent for evil; while, on the other hand, high and ennobling qualities are most powerful for good. We all recognize the refining influences exerted upon children, by surrounding them with the beauties of nature and the objects of high art. How much more powerful must be the impressions produced by the presence of a noble specimen of humanity, whose every feature beams with intelligence, and gentleness, and kindness, and that glorious cluster of virtues—the “flowers of paradise”—which constitute moral beauty! Moreover, if such influences are transmissible to future generations by means of the principle of heredity, who can say what degree of potency for good or evil slumbers in the character and countenance of the teacher who presides over the primary school?

But the question has, doubtless, already occurred to many of you—how can the services of such ideal teachers for the young be secured? This is a question which I do not feel myself qualified to discuss; it deserves the most serious consideration of the school directors. In the meantime, it is safe to say that the impossible problem of securing an excellent article without paying a liberal price for it, like that of perpetual motion and the quadrature of the circle, is no nearer solution in our day than it was 2,000 years ago. Nevertheless, we may rest assured, that whenever the general public fully appreciates the supreme importance of these earliest steps in education, a more discriminating and generous policy will unquestionably prevail.

THE PROPER USE OF SCHOOL LIBRARIES.

(A paper read before the California State Association of Teachers.)

BY MRS. KATE B. FISHER.

(Oakland High School.)

IN TWO PARTS—PART TWO.

IT is safe to say, that there has never been a time when fifty dollars could buy as many really good books as it can to-day. The ideal library, of course, contains editions of the best authors, in a dress worthy of the thoughts within. But if you cannot buy a thirty-dollar edition of Macaulay, you may, for fifty cents, buy his “Life and Letters”; for a dollar and eighty cents, his “Essays and Poems,” in three volumes; for a dollar and a quarter, his “History of England.” Our old friends, “Rasselas,” “The Vicar of Wakefield,” “Picciola,” “Undine,” and “Paul and Virginia,” come to us in one volume for fifty cents. One dollar will purchase a well-bound volume containing, in clear type

Macaulay's "Frederic the Great" and "William Pitt," Carlyle's "Burns," Arnold's "Hannibal," Liddell's "Julius Cæsar," Lamartine's "Cromwell," "Columbus," and "Mary, Queen of Scots." Dryden's "Virgil," Pope's "Homer," and Cary's "Dante," are issued in neatly-bound volumes for thirty cents each, and "Milton" for forty cents. Two dollars will place on your shelves Chambers' "Encyclopedia of English Literature," and one dollar will procure for you Taine's "English Literature," in binding that would not disgrace any library.

This list might be indefinitely extended; but enough has been said to show the possibilities of the subject. For those who desire to pursue it farther, many helps are readily accessible. Our leading publishers are glad to send full catalogues of their issues, upon application; the Harpers asking nine cents, other firms nothing. I have lately received, from a Boston house, a clearance catalogue offering a long list of standard works, at a discount so great, in some cases, as fifty per cent. The papers previously mentioned—"Good Literature," for fifty cents yearly, and "The Literary World," for two dollars, are valuable aids. The former is mainly in the interest of the American Book Exchange, but contains much excellent matter. The latter is more catholic, and embraces announcements of all leading publishers, well-written reviews by reliable critics, and original articles of value. Publications like these are of especial use to those at a distance from our larger cities, who, wishing to avoid the ruts into which a teacher is prone to fall, and to keep pace with the current of modern thought, have no access to book-stores or large libraries.

But after the standard works of prose, and the half-dozen, or more, royal poets, comes the great question of fiction. What shall we choose to satisfy the restless imagination of the young?

Joseph Cook says, that there are not more than a thousand really first-class books in the English language. Setting aside the science, poetry, history, travel and biography, our choice in fiction will be narrowed to a moderate limit, provided we accept Mr. Cook's statement. If we think this too small an estimate, we certainly must agree with a recent writer, who says: "As a large proportion of the human race now write books, with objects as various as human activity, books as books, are entitled, *a priori*, until their value is proved, to the same attention and respect as houses, steam-engines, pictures, fiddles, bonnets, and other thoughtful or ornamental products of human industry."

Here, as in poetry, let us stick to the masters. Who would choose a beggar for his friend when he might be the intimate companion of a king? A rule which Emerson gives, is: "Never read a book which is not a year old." While this may admit of modifications with regard to books of science, it is quite safe as applied to works of fiction. Doubtless many of the pleasant, readable books of the day are fair in style, and respectable in morals. But when we have so much to read, and life is so short, we have no time for second-rate books. Give young people the novels that have stood the test of time. When they are older, the "No Name," and "Leisure Hour" series,

and their kindred, whose name is legion, will have been tested. Those which are worthy, and there are some, will remain. The directors of the British Museum have lately introduced a resolution excluding from their shelves any work of fiction less than three years old. For the leisure hours of a school-boy or girl, there is material enough to be found in Thackeray and Dickens, Scott and Cooper, George Elliot, Hawthorne and George Macdonald.

We must remember here that it not always safe to give to a child what a mature mind may read with safety, and even profitably. I refer particularly to the portrayal of scenes of vice. Depraved as are the characters in some of Dickens' works, they make vice so repulsive and its ends so tragical, that the moral lesson is good. But what shall we say of the romantic and fascinating gamblers and villains whom Bret Harte and kindred writers depict, and whom they invest with a certain charm, similar to that which clothed Paul Clifford, Eugene Aram, and other heroes of Bulwer Lytton's earlier novels? Bill Sykes and Fagin are less dangerous acquaintances than John Oakhurst and his brethren. It is vice made attractive that demoralizes.

The weak, namby-pamby goodishness of another class of books—notably, the array found on the shelves of many Sunday-school libraries—is almost equally fatal to the formation of lofty ideals in the mind of a child. For our hero-worshipping boys weak goodness has no attractions; they admire strength, courage and manliness. A really good book portrays these qualities, enlisted in good causes, and governed by a quick conscience and discernment of right. The dangerous book is the one whose hero has the strength and manliness, with the conscience and moral rectitude left out.

Co-operation is no less valuable in cultivating literary taste than in matters more material. A teacher could not do a greater service to a community than by establishing a Reading Club. The success of the Chautauqua Circle is conclusive proof of the possibility and popularity of such an organization. If this work, which teachers will find pleasingly set forth in the October number of the *JOURNAL*, is unsuited to the community, or if it seems desirable to enlist a younger class, who have not sufficient maturity to pursue the subjects forming the basis of that work, a less advanced course may be made both useful and interesting.

Mr. Ruskin has established, among the young people of England, an association known as the "St. George's Company." I am not fully informed as to the scope of the proposed work; but one feature is a thorough study of the history of certain noted cities: say Rome, Athens, London, Constantinople, and Jerusalem. The collateral reading necessary for such an investigation might obviously be pursued to an indefinite extent; but a very moderate amount, such as would be at the command of most teachers, could not fail to arouse an interest that would lead to further research in the same line. The biography of eminent men, or the history of great battles, might furnish other good starting-points. The Agassiz Society, of Boston, numbering several hundred young people as members, pursues the study of natural science in a similar manner.

One large class of reading has not been touched upon, namely, magazines

and other periodicals. It would seem almost an insult to the body of teachers to give any word of warning against that reeking mass of pestilential filth that is circulated in the form of illustrated newspapers among our boys, or that weak embodiment of vapid silliness found thinly spread over the pages of the Waverly Magazine, the New York Ledger, and a host of papers of which our girls are reading hundreds monthly. If I could read to you a production which came into my hands within a month, it would be the strongest argument I could offer to prove the vital importance of our watchful care for the reading of our pupils.

Two little girls, in the lowest grade of one of our Oakland grammar schools, had busied themselves, in stolen moments, by writing a novel on the co-operative plan, each filling an alternate page of a blank-book. The familiar characters were all there, going through their usual routine of silliness; the young lady with golden hair and azure eyes, and her dark-eyed friend with locks like the raven's wing, both resplendent in toilets that would have delighted the author of "Endymion"; the usual variety of lovers, and balls, and rides, and sails, and watering-places; the proper amount of love-making; the girl's worldly-wise choice of the rich man she did not love, and her rejection of his poor but respectable rival. Page after page these babies had written, of this ineffable stuff, a perfect counterpart of that found in the papers mentioned, and yet evidently original as far as mere words could make it so.

How easy to determine what their style of reading had been. If any teacher would strike immediately the key-note of a class, let him have a composition exercise, in which each pupil shall be required to write a sketch beginning with a suggestive phrase, such as, "When he opened his eyes," "As they ran by," "The sound of the gun," or any one of a hundred such. These compositions will reveal at once the character of the pupil's reading, and the consequent character of his thought. The teacher thus learning the individual needs of his class, can shape his instructions accordingly.

This paper has grown far beyond my original design, and yet, as I write, new avenues of thought open, upon which I may not even venture to enter. I have aimed to make these few suggestions entirely practical and practicable.

The field is as wide as human thought. We must not be disappointed if, entering on this work with enthusiasm, our labors yet show but tardy results. The formation of literary tastes, like the growth of character, is not the work of a day or of a year, but is the result of slow accretions. Yet no well-directed effort can be wholly lost. The great law of conservation of force rules mind as well as matter, and herein lies at once the teacher's incentive and hope. The seed we sow may yield its fruitage to other hands than ours; but let us none the less mellow the soil, remove the noxious weeds, and plant the germs of immortal truth, which, in that it *is* immortal, gives sure promise of a rich harvest-time.

Dr. John Lord, in one of his recent lectures, said, that every age is characterized by some dominant idea or special object of pursuit: that, as the age of Michael Angelo was signalized by the revival and ennobling of art, so our own is the era of industrial progress, and scientific research. He added

the prophecy, that some new and totally different idea would engross the thought and energy of the coming generation, the mechanical industries reaching their acme of success in our own times. What this regnant form of thought might be he did not venture to predict. But, in view of the tendencies of our most thoughtful men and women, and the universal agitation of the topic by all classes of people, is it unreasonable to suppose that a rational system of education will be the crowning achievement of the next century? That the happy mean will be reached between the æsthetics of the early Hellenic culture, and the merciless cram of the nineteenth century, which so torments the mind of the growing child with mathematical formulas, and the mechanics and metaphysics of language, mere shells of thought, that he is wearied and disgusted and his mental digestion fatally impaired before he reaches the sweet kernel within. A recent writer compares this latter system to a vigorous manual of knife-and-fork exercise with no food as an objective point.

In that happier era, the teacher, no longer possessed with the idea that, between the ages of six and sixteen the pupil must acquire at least a partial knowledge of all the arts and sciences known to modern civilization, will cease to infuse into the passive brain weak decoctions of the whole array. He will rather train the faculties to an independent and vigorous activity; give the taste and judgment impulses in right directions, and inspire strong and persistent desires to follow those directions to some worthy end. He may even accept Mr. Froude's opinion, that "it is better to make a pair of shoes excellently well than to write bad exercises in a half-dozen different languages."

We shall not be the millennial teachers. But when we see the professed friends of public education joining hands with its avowed foes in efforts to destroy the unity of the system; when in our own ranks, a spirit of self-laudation and satisfaction too often blinds us to the defects of present methods; when incompetent and venal Boards of Education, by political favoritism and petty domineering, foil the plans of our best educators; when a depraved public sentiment and dead-letter laws almost nullify our efforts for the moral training of the young—we may well ask ourselves if we are not dwelling in that deeper darkness which is the forerunner of the dawn; whether we shall not soon reach that reactionary point which is the beginning of all radical reforms?

If this be so, it gives no occasion for relaxed effort. It warns us to bend all the more to the work before us, and to strive with such power as we have to hasten the dawning of that broader day, in whose light the coming generations shall rejoice.

TALENT is that which is in a man's power; genius is that in whose power man is.—*Lowell*.

NOTHING is so contagious as enthusiasm; it is the allegory of the tale of Orpheus—it moves stones, it charms brutes. Enthusiasm is the genius of sincerity, and truth accomplishes no victory without it.—*Bulwer*.

SONGS OF THE SCIENCES.—ZOOLOGY.

O H! merry is the Madrepora that sits beside the sea,
 The cheery little Coralline hath many charms for me;
 I love the fine Echinoderms of azure, green, and grey,
 That handled roughly, fling their arms impulsively away;
 Then bring me here the microscope, and let me see the cells,
 Wherein the little Zoophyte like garden floweret dwells.

We 'll take the fair Anemone from off its rocky seat,
 Since Rondeletius has said when fried 't is good to eat.
 Dyspeptics from Sea-Cucumbers a lesson well may win,
 They blithely take their organs out, and then put fresh ones in.
 Rotifers in whirling round may surely bear the bell,
 With Oceanic Hydrozoids that Huxley knows so well.

You've heard of the Octopus, 't is a pleasant thing to know
 He has a ganglion makes him blush, not red, but white as snow;
 And why the strange Cercaria, to go a long way back,
 Wears ever, as some ladies do, a fashionable "sac";
 And how the Prawn has parasites that in his head make holes,
 Ask Doctor Cobbold, and he 'll say they're just like tiny soles.

Then study well zoology, and add unto your store,
 The tales of biogenesis and protoplasmic lore:
 As Paley neatly has observed, when into life they burst,
 The frog and the philosopher are just the same at first.
 But what's the origin of life remains a puzzle still,
 Let Tyndall, Haeckel, Bastian, go wrangle as they will.

—Punch.

MONDAY MORNING TALKS.

BY MRS. SARAH M. WYMAN.

I.—COURTESY.

IN the "Note Book" of the November number of *The Teacher* is this inquiry: "How can coarse, rude children, from uncultivated homes, be made refined pupils in the school?" The very apt illustration given in reply suggests yet another inquiry: *How* can *we* most effectually "clear away the filth," and "let the angel out"? Shall we depend entirely upon our example and silent influence? Nothing can take the place of these, or even approximate them, especially when the crystallized soul shines out into the daily life of the teacher. Certain additional efforts for the development of that true courtesy which springs from the heart have come under our own observation, some portions of which we propose to bring before the readers of *The Teacher*.

School-room: Forty scholars, ranging from eight to fourteen years of age. Teacher, Sarah Mills. Monday morning. The sweet voices of children have joined in the hymn, "Nearer, my God, to Thee." The hush of "Our Father" still rests upon the school. Expectant eyes turn to the teacher, for Miss Mills never allows a Monday morning to pass without some little deviation from the regular exercises.

"Children, I have a story to tell you this morning," she says; "a true story. How many are ready to hear it?"

Hands flutter, eyes sparkle, and there is a little twisting of the more nervous pupils preparatory to the usual quiet during the Monday morning's digression.

"Three weeks ago last Saturday I spent the day in Boston. It was cold, and the streets were very slippery. I was in a crowded horse-car near Tremont Street, when I saw an old woman, thinly clad, trying to make her way upon the icy sidewalk. Her hands were purple with cold, and her face bore marks of suffering—and, children, I am sorry to say it, but it also bore marks of a wicked life. And here, I want to tell you what Emerson says. How many know who Emerson is?"

Hands eagerly rise, for there are few men of note that Miss Mills' scholars are unacquainted with.

"This is what he says in one of his books: 'Every change in our experience instantly shows itself on our countenance, just as time tells itself on the face of a clock.' Do you understand, children? Our faces are clocks, that tell others what our lives have been; whether good or bad; if our thoughts are pure and right; or if we are planning wrong-doing and indulging wicked thoughts. This poor woman had, evidently, little to make her comfortable and happy. We do n't know what great temptations she might have had. Perhaps, step by step, first in little things, then in greater ones, she had been led to do wrong and think wrong, until her face told the story just as plainly as the hands on the clock of Park Street church, at that moment, told it was twelve o'clock; and oh! I pitied her all the more, that she was not only cold and poor, but that she was suffering, also, from the effects of a bad life.

"The clock had just done striking when the woman's foot slipped, and she fell upon the pavement. At that moment a young girl came along on the sidewalk. Her feet were protected with rubbers lined with flannel and tipped with fur; her dress was bright and warm, and she was sheltered from the wind under her sealskin cloak and cap. As she approached the woman, vainly attempting to rise, she looked at her a moment, then drawing the warm folds of her dress more closely around her, tiptoed out to the edge of the sidewalk, and hurried on into a neighboring store. The poor woman tried in vain to rise. She was evidently in great pain, and her face was growing very pale. Our car had stopped, being hedged in with carts and wagons and the crowd of men and horses in the street. A sweet-faced mother at my side begged her husband to get out of the car and help the poor woman; and we all started for that purpose, when there appeared a young man around the corner, walking rapidly toward her. 'He'll help her up,' said the husband. The young man carried

a cane, and seemed to enjoy the keen air. He walked securely, but passed by, not even looking at the suffering woman, although I saw her reach out her hand toward him as if for help. Another young man passed, muttering to himself something about such 'Poor old creatures, always on the street.'

"All this time a boy had been sitting close by the door of the car, absorbed in a copy of *Cæsar*. Our attempt to get out caused him to turn his eyes to the sidewalk. In an instant he sprang from his seat, out of the car, made his way under horses' necks, between wheels and carts and wagons, over the icy gutter, and bounded to the woman's side.

"'Are you hurt?' he said, tenderly. 'Let me help you up,' giving her his hand.

"'You are not strong enough,' sobbed the poor woman.

"'Oh, yes, I am!' and he lifted her from the pavement. By this time three gentlemen had gone from the car to his aid. She had injured her hip, and could not step without a cry of pain. 'Make room for her in the car!' shouted the boy to the conductor. And, children, if General Grant had issued the command, it would not have been more readily obeyed. The woman was lifted into the car. The boy, whose name I have since learned was Lewis Gray, took up his books, which had been left on his seat, and sat down by her side, inquired where she lived; and finding she occupied an attic remote from the line of cars, he told her she must stop at his house, adding, 'Mother will see what can be done for you.' Lewis' kind words seemed to affect the suffering woman. Tears rolled down her cheeks as she sat quivering from head to foot. Soon the car stopped; two strong men helped her out; Lewis managed to get her up the steps, and presently they entered the house."

Miss Mills paused a moment, when she saw John Flinn, a thoughtful boy, suddenly raise his hand. "Well, John," she said.

"Will you please tell us how you found out his name?" answered the boy.

"Yes, John, I will tell you. Your former teacher, who came to see us on Friday, you remember, knows the family, and was at Mr. Gray's when the poor woman was brought into the house. She told me his name."

"What did Lewis' mother do?" said Susie Reed.

"Oh! she cared for her very kindly; sent for a physician, and told her to stay with them until the next morning. Had I time, children, I might tell you how thankful the poor woman was, and of the wish to leave off drinking and all her other bad habits, if they would only get her a good place to live in. But the hour has almost expired. You can think this over, and next Monday morning we will talk about it. Now, a few of our Saviour's words, and then to our lessons. You may all turn to the 10th chapter of St. Luke. Julia and Maria may read alternately from the 30th to the 38th verse.—*The Primary Teacher*.

A MAN is a child till the age of twenty; a youth till he arrives at forty; a man at sixty, and an old man at eighty.—*Pythagoras*.

BULLETIN OF THE UNIVERSITY OF
CALIFORNIA.

SPECIAL ANNOUNCEMENT TO PREPARATORY SCHOOLS.

General Statement.—The University of California is an integral part of the public-school system of the State. As such there should be as close connection between it and the high schools as there is between any other two grades in the whole system. Every teacher, of whatever grade, knows that his work is only preparatory to something beyond, and that a large part of it, therefore, consists in inspiring his pupils with a desire to go on to still higher attainments. The high schools should work in this spirit with reference to the courses of the University, as the University should with reference to the intellectual pursuits of after life. All the grades of our educational system ought more and more to become mutually helpful. It is of the greatest importance that the University and the high schools should be brought into closer relations of harmony and co-operation. It is the desire of the University to work with the schools in every way. With a view to this end it has the following announcements to make :

Recommendations of Candidates.—The Faculty of the University request all principals of high schools, and of schools of similar grade, sending candidates for admission to the University, to communicate to the Faculty a statement of the work done by such candidates, and an opinion of their fitness to be received into the University.

Admission of Candidates from Approved High Schools.—Upon the request of any public high school of California, a committee of two professors of the University will visit such high school and report upon the kind and quality of its course of instruction. If the report of such committee be favorable, the graduates of such high school, if so recommended by its principal, may be admitted to the Freshman Class of the University without examination for admission.

The actual expenses of the visiting committee are to be paid by the high school so visited.

CHANGES IN THE REQUIREMENTS FOR ADMISSION.

Grammar.—For admission to any of the courses it is announced that an elementary acquaintance with literature, with evidence of intelligent reading and study of good authors, will be accepted as an equivalent for the advanced study of technical grammar. The acquisition of both, however, is recommended, provided the grammar be studied understandingly. No other changes have been made in the requirements for admission to the Colleges of Science.

Latin.—As has already been announced, the requisitions in Latin for the Literary Course will be increased in 1881, so as to include six orations of Cicero and half of Jones' "Prose Composition"; in 1882 they will be the same for the Literary Course as for the Classical Course, including six books of Virgil's "Æneid."

Note.—For the present, in examinations for both these courses, the Eclogues and Georgics of Virgil will not be insisted on.

It is of the first importance that students be well grounded in the grammar and prose composition; and the above temporary concession as to the amount of reading required will, it is hoped, secure a more general attention to thoroughness in the elementary work. On this side of the preparation the examination will be increased in strictness.

French and German.—It has already been announced that in 1884, the requirements for admission to the Literary Course will include a good reading knowledge of either French or German. The University would now state that for the first five years it will accept in place of the requirements in French and German, what may be deemed fair equivalents in preparatory study and discipline, viz., elementary physics and elementary chemistry, or one of these with advanced studies of English literature.

Physics.—The requirement in elementary physics, as an alternative for a modern language, will be such an acquaintance with the subject as may be obtained from Peck's "Ganot."

Chemistry.—The similar requirement in elementary chemistry, is embraced in Elliot and Storer's "Manual of Elementary Chemistry," omitting the last half of chapter fifteen, and chapters sixteen and seventeen, and in other good elementary text-books. The desire is that the students may be fitted to enter the laboratory at once, and thus obtain a more satisfactory knowledge of the subject.

English Literature.—With regard to the requirement of English literature, offered as one of the alternatives for a modern language, (required for the Literary Course in 1884 and thereafter) the following suggestions are made: The study of English literature means chiefly the careful reading of some of the best works of the great authors. Hand-books of the history of literature are, no doubt, useful, especially as books of reference, but should not by any means take the place of the study of the authors in their own works. They stand in very much the same relation to literature as the traveler's guide-book to the countries he visits. The tourist who only reads the guide-book and never looks at the country, might as well have stayed at home. It is useful to memorize the dates and chief biographical facts of a few of the great names, but it is of small profit to do so in the case of lesser writers whose works are not to be read. The way, therefore, to use such a manual as that of Collier, or Shaw, or Arnold, is to read it for the most part as a guide-book, learning only the most important and interesting facts, and constantly seeking outside of the text-book for the real profit and enjoyment of the study. Such works as the following, for example, it would be very profitable and interesting to read: Chaucer's "Prologue"; Bacon's "Essays"; Shakspeare's "Merchant of Venice," "Midsummer Night's Dream," "As You Like It," "Henry Fifth," "Julius Cæsar," or other plays; Milton's "Comus" or "Paradise Lost"; Johnson's "Lives of the Poets" (Arnold's ed.); Cowper's "Task"; Gray's "Elegy"; Macaulay's "Lays"; Irving's "Sketch Book"; Hawthorne's "Wonder Book," or his "True Stories"; Dickens' "Christmas Stories"; Miss Muloch's (Mrs. Craik) "A Noble Life";

Scott's poems or novels; George Eliot's "Silas Marner," or "Mill on the Floss," or "Romola"; Carlyle's "Heroes and Hero Worship"; Green's "History of the English People"; Freeman's "Norman Conquest"; Tyndall's "Hours of Exercise," or scientific writings; Darwin's (Chas. R.) scientific writings; translations from the Greek of Homer ("Iliad" or "Odyssey"), Æschylus, Sophocles, Euripides, or Plutarch ("Lives"); Longfellow's and Whittier's poems. Good thorough work in any of these books, or such as these, will help to bring the pupil's mind to that point which is desirable: namely, *the ability to read at sight—i. e., to understand and appreciate our best authors.* By thorough work, is meant simply that the book, or the part of it selected, should be read not with the eye only, but with the mind, so as to get from the words all that the writer put into them, of direct meaning, allusion, and suggestion. Many of the works mentioned, and other such, have been published in cheap editions. The professor of English literature will be glad to correspond with any teacher seeking information as to this whole matter. The above suggestions are not only applicable to the future offer of English literature as an alternative when a modern language shall be required in preparation for the Literary Course. They apply also at the present time with regard to all the colleges and courses of the University, in connection with the announcement that evidence of advanced study in English literature will be taken to cover any small deficiency in formal grammar and rhetoric. It will be considered greatly in a candidate's favor, if he acquit himself well under the test of reading aloud from some previously unknown book intelligently, and then writing out in clear English the substance of what he has read; and if he can write out a full, clear account of some subject, included in any one of a number of good books offered as having been well read (the examiner selecting from these at his own discretion).

SPUN GLASS.

A PHYSICAL QUESTION ANSWERED.

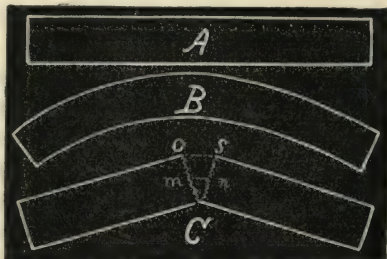
BY VOLNEY RATTAN.

"WHY is not spun glass brittle like other glass?" asked a high-school girl as she admiringly caressed the satiny threads which a glass worker had just drawn from the molten end of a glass rod. "I twine this skein of glass around my fingers as I might a lock of silken hair, yet I am sure if I attempted to bend the glass rod, of which but a minute ago these threads were a part, it would break. Can it be that the drawing process has toughened the glass as they say it does the iron when wire is made?" The promised answer was given next day, somewhat as follows:

"Here are several pieces of redwood, each a foot long and half an inch square. I can bend one of them a little; but, as you see, the curvature is not

great, when it snaps in two. I split one stick in halves. I can bend each half more than I did the entire stick when it broke. One of the halves I split into pieces, each of which I can easily bend into a half ring. With this carpenter's plane I cut off a thick shaving, the ends of which I can bring together without breaking, but its brittleness is shown when I attempt to bend it more sharply. Setting the plane to cut a very thin shaving I get a ribbon, which, as it is made, coils into a close curl. Evidently the wood cannot have taken on any new property while undergoing these splitting and shaving processes. It is just as brittle in the shaving as in the stick.

With the aid of this diagram I think it can be made clear to you why the flexibility of solids increases as they are made thinner or more slender. *A* represents a solid, which may be bent as represented by *B*. Do you see that either the upper side of *A* must stretch, or the lower side must contract, or both? Really, in either case, one side stretches while the other



has its particles squeezed together. For simplicity we will suppose that the upper side stretches while the lower side remains unchanged. It is evident that it must stretch about as much as represented by the distance *o s* in *C*; then in a solid half as thick the stretching would be the distance *n m*, or half as much. It follows, that if the thickness is reduced to one-thousandth of that represented in the diagram, the upper side will have to be stretched only one-thousandth of the distance *o s* in order to bend the solid as much as is represented in *B*. Placing this glass rod parallel with the edge of the table, you can see that it is possible to bend it a very little. Now get your friend the microscopist to measure the diameter of one of your glass threads, and you will not wonder at their flexibility.

COMMON SLIPS IN WRITING AND READING.

BY E. R. SILL,

[University of California, Berkeley.]

THERE are certain few errors so common, and yet so easily avoided by a little care, that it would seem worth while for every teacher to fortify his pupils against them beforehand. Not that errors in writing and reading are the most important things in the world. To be able to reason well, for instance, and to be a truth-seeker and truth-speaker, are somewhat more needful than any degree whatever of orthographical or orthoepical perfection. But the point is, that while these intellectual and moral graces are very hard to teach and acquire, needing line upon line and precept upon precept—and, more

important still, example upon example—for years and years of patient training, these little slips in written or spoken speech can be very easily avoided. If, for example, any teacher who reads this paper were to devote a school-hour for three successive forenoons to the errors noted herein, he might go far toward saving his flock from at least these particular pitfalls; and it is really worth doing, for though all these matters of sound and appearance are but superficial and trifling things when contrasted with wit, wisdom, and moral worth, still they have a good deal to do with success and comfort in life after all. A bungled letter written to a stranger, or a boggled utterance among strangers, puts a certain label on a person which it is hard to get changed. Besides, each of these errors stands as a type of many more of the same class, so that to call a child's attention to one mistake is to put him on his guard against a hundred.

Suppose, then, that the teacher, to-morrow morning at ten o'clock, sets all his pupils to writing a composition, including the small tots who can but just form the letters, and who perhaps get the *a* wrong side around, and have to come up to be shown once more how to make a *q*. Give them the subject of any pet they have at home, or ever have had—what color it is, what it lives on, what it can do, etc.; or some game they like to play and how to play it. Give a few general directions: as, to write at the very top of the first page the title, then the writer's name, then the date, each immediately under the other; to write on only one side of the paper; to number each page (little pupils should have little pages) before writing even the first word on it; to set in to the right about half an inch the beginning of a new paragraph; to leave a half-inch margin at the left; to keep the beginning and end of the lines on a straight vertical line, showing them how all these things are done in books. Then as to penmanship: remind them that there are three points in fine penmanship. The first is legibility, and the second is *legibility*, and the third is **LEGIBILITY**; and to attain this, one only needs to take care to make each letter conscientiously just like itself, and not like some other letter. Warn them that writing should not be too fine, so as to need a microscope; nor too coarse, as if done by a sign painter; the letters not crowding each other, nor losing sight of each other; and, above all, no extra flourishes. Remind them that every sentence begins with a capital, and ends with a period.

When they have written (or nibbled their pencils) for fifteen minutes, take up their papers, and while they study, or rest themselves if they are small, go over the papers rapidly, making a cross in the left margin opposite each error *in the matters to which their attention has been called* (no others at present—a few things at a time). *Never make the correction yourself*, but only indicate the line wherein something is wrong, and let the pupil, perhaps with your help after awhile, not only find the mistake, but *actually make the correction* then and there, drawing a line through the words and writing between lines. After marking them in this way, return them to be corrected; or, if very bad, rewritten; or, if perfect in these things, continued. Let a few of the very best of them, in these respects, be read aloud at some odd hour. So, in one lesson after another, different points may be attended to.

Let me now briefly indicate a few of these points which every teacher should make sure of attending to at the earliest opportunity:

1. PUNCTUATION.—There are certain niceties of punctuation which can only be acquired by long practice; but there are a few fundamental points that any grammar pupil can learn: for instance, the *period* at the end of a sentence; the *colon* before an enumeration of particulars, as just above; the *semicolon* between the particulars, if long and pointed with commas, as just here; the *comma* indicating where a little group of grammatically connected words ends and another one begins, or before a qualifying relative clause equal to “and he” or “and it,” not restrictive; or where “and” is omitted, as between adjectives; or on both sides of parenthetical matter, fencing it out from the sentence like parenthesis marks; the *interrogation point* after questions; the *exclamation point* after an exclamatory word, or phrase, or sentence, and nowhere else—never after a mere declaratory sentence; the *dash* where there is a sudden break in the construction, and nowhere else—never to dodge an ignorance of the proper point; the *hyphen* between parts of a compound word, unless so old a compound as to need no further glue, and between the syllables of a word split at the end of a line—taking care to split at the joints, as by derivation, not breaking the bones of a word—and putting the hyphen at the end of the line, not the beginning of the next.

2. SPELLING.—Proper adjectives, as well as nouns, should have a capital—even the Indian and the Chinese. Contractions are spelled with a period, as *i. e.*, *etc.* (better written so than with the sign, &c.); *viz.*, followed by a comma for punctuation, the period merely marking the abbreviation (but better expressed by the English word *namely* than by the Latin *viz.*) The possessive case is spelled with the apostrophe, which is just as much a part of the word as any of its letters, standing as it does for an ancient *e*. *Its* and *hers*, *ours*, *theirs*, have no apostrophe, because they never had any *e*.

As to spelling in general, it is well to meet the notion that a child sometimes gets now-a-days, that the new ideas about spelling make all care about it superfluous, with this suggestion: the advocates of a change are seeking a reformed spelling; but nobody wants a deformed spelling. The new spelling will follow rigid rules; and until these rules appear, we shall do well to follow the old ones. In fact, we must do so, or make ourselves ridiculous. The following are a few of the words perpetually misspelled, worth writing on the board occasionally: the participle of *die*, *lie*, *tie*, *vie*, *hie*; words with the diphthong *ei* and *ie*, (the convenient rule is, after *s* and *c*—the same sound—the *e* precedes, otherwise, *i*. These exceptional words with *ei* are mostly from Latin *capere*, and the *ei* was doubtless once pronounced *ay*); *till* and *until*, *separate*, *analyze* and *paralyze*, *psychology* and *rhythm* (see the Greek initial), *loose* and *lose*, *principal* and *principle*; adjectives in *able* and *ible* (a convenient rule is, those from Latin verbs in *are*, and those of English formation, the majority, have *able*; others, *ible*, mostly from Latin in *ere*).

3. PRONUNCIATION.—*a*. Clipping words. The following words are among those most commonly clipped by children: *real*, *further*, *miserable*, *library*, *comfortable*, *gradually*, *character*, *government*, *geography*, *zoölogy*, *kept* (as *kept up*), and (as *has* and *is*) and participles in *ing*.

b. Accent on wrong syllable. *Allies*, *extant*, *complex*, *discourse*, *tribune*,

Carlyle, idea, museum, spectator, precedent and precedence, exquisite, lamentable, despicable, phylloxera (chief accent on *e*, secondary on *phyl*), abdomen, cerebral, incomparable, Beethoven (accent on first syllable, pronounced as Bay), *drámatic persónæ*, ignoble, opponent.

c. Accented syllable—wrong sound. As to this class of errors, all children should be taught the notation of sounds in Webster's Dictionary, in connection with the discussion of sounds in the introduction, "Principles of Pronunciation." In particular see the discussion of *ă*, *á*, and *â*.

The following are some of the veteran mistakes: get, yet, forget, etc.; on, upon, hot, not, etc.; because, only, been, were, nothing, dew, new, etc.; deaf, draught, drought, jugular, leisure, docile, progress, process, specious, route, cow, owl, diphthong, Wordsworth, extraordinary, Sierra Nevada, past, vast, grass, glass, dance, branch, after, etc. (*á*); path, laugh, half, calf, staunch, gaunt, haunt, psalm, gape, aunt, etc. (*â*).

To illustrate and practice these sounds of *a*, this sentence of nonsense, and other such, may be written on the board occasionally, and uttered by individual pupils: *ăn't* (*i. e.*, if it) be an *ánt*, 'tis not my *âunt*.

d. Unaccented syllable—wrong sound. The clear pronunciation of unaccented syllables is the most critical test of a cultivated speaker. The following are noteworthy as to the first syllable: Italian (short *i*), bouquet (not *bo*), arithmetic (not long *a*; see Webster's "Principles of Pronunciation," par. 44.); and the following as to the final syllable: metaphor, governor, elector, etc.; America, Louisa, algebra, etc.; effort, summit, poet, poem, poetry, chaos, engine, hostile, juvenile, profile, etc.

One might easily point out a few equally common slips in diction, or in grammar, or in style of composition: as, for instance, in the use of shall and will, should and would; the expression, "should have liked to have gone"; the splitting apart of closely connected words, as "*to* quickly *go*," or, "*of* quickly *going*," or, "*it* quickly, in spite of all that could be done, etc., *flew*"; the use of worn-out figures in place of plain language, as, "the golden State," "the orb of day," "glorious old Sol," etc.; the use of "album" words for ornament, in place of simple and natural English, as "tresses, swain, o'er, e'er, anon, mead, vale, rove," etc., etc.

But any further suggestions must be deferred to a future article. The writer would esteem it a favor if any teacher would send him a short list of such errors in written or spoken English as he has found most common, in order that any hints in a subsequent paper may be as useful as possible.

As was said before, such slips are not violations of the moral law, but to guard young people against them is so easy, and will save them from so many mortifying experiences, that it is worth a little attention now and then in the school-room.

TAUGHT or untaught, the dunce is still the same:

Yet still the wretched master bears the blame.—*Dryden*.

JOINTS IN OUR ARMOR.

[A paper read at the last session of the California Teachers' Association]

BY H. B. NORTON.

[State Normal School, San José.]

WE seem to be living in a period of the world's history remarkable for its tendency to critical analysis. The scientific method is doing its work, conservative, re-creative, or destructive, with respect to all human institutions. Everything is being tested, measured, weighed, in response to the questions: Is it true? Is it useful? The spirit that guides in these questionings is thoroughly judicial. It overlooks no failure and condones no fault. It seeks only the preservation of the fittest. Heaven and earth are being shaken, that the things which cannot be shaken may stand.

It is not at all wonderful that our educational systems are compelled to share the common experience. We, who stand as representatives of these institutions, should not be surprised or indignant if our work suffers the un pitying scrutiny which is testing the value of all other forms of human effort.

Of late, criticisms have multiplied, and they have come with startling force from unexpected directions. I will refer to three of these sources as being typical, almost exhaustively so, of the spirit which dictates such attacks.

One of these has its origin in California. It has been asserted in print, that the universal education and religious freedom which prevail in certain groups of American States, are mainly responsible for their large record of crime. Massachusetts is selected as the especial subject of attack, and extracts from the reports of her penitentiary have been published, seeming to show that native-born and educated Americans form the great proportion of her criminals, and that, therefore, our free schools are nurseries of crime. I affirm that this pretentious array of figures has been so presented as to conceal, rather than reveal, the truth. I have taken some little pains to investigate this matter, and now hold in my hand the report of the Massachusetts penitentiary for the year 1879. I find that while a majority of the convicts were born on our soil, only 94 out of the 346 prisoners discharged during the year, were born of American parents. It would be impossible, or at least most ungracious, to here enter into a more detailed analysis of this report, in so far as it relates to the parentage or the religion of these convicts; but it fully vindicates the children of the Puritans. The felons who crowd the Massachusetts prisons are not of her ancestral race. The mere fact that a man was born of alien parentage at the Five Points, or on Tar Flat, does not in any just sense constitute him a member of the American household. The Massachusetts report merely shows that scantily educating one generation will not entirely wipe out the taint of ages of ancestral ignorance.

South Carolina is selected as the State having a better criminal record. It is noticeable that her white people and their ancestors, for some two centuries, have lived on her soil. The blood that crowds the northern prisons

is wholly wanting there. The sons of the Puritans are not burglars or bruisers, the children of the Virginian cavaliers are not sneak-thieves or ravishers. Look at these reports for yourself, if you are doubtful, and see whether this tendency to crime is not the bitter fruit of a heredity into which enter forces derived from ages of political serfdom, intellectual darkness, and spiritual slavery.

Richard Grant White has thoroughly startled the public by his recent contribution to the discussion, published in the issue of the *North-American Review* for October last. Mr. White certainly fires his volley from a height of almost exaggerated and abnormal culture. We have all enjoyed the essays of this monster of erudition, concerning "Words and their Uses," although his methods are often flippant and impertinent, and his thoughts reflect the hopeless pessimism which seems almost inherent in his atmosphere of over-culture. His main fault lies in an over-hasty acceptance of our Californian synopsis of the jurisprudence of crime. He has certainly studied the question to very little purpose.

From such attacks as these, our educational system has very little to fear. They pass by it as the idle wind. There is, however, one tribunal of human judgment which has a mighty power behind it, and this is the conscience of earnest, thoughtful men. This has always been the most powerful force in determining the course of history. This conscience may be mistaken, perverted, fanatical, but is none the less omnipotent. Viewing the question from a merely selfish stand-point, it behooves us, above all, to make our peace with the organized conscience of the State and nation.

Rev. J. K. McLean, D. D., of Oakland, has recently published an essay which has caused much comment. In it the author has voiced the prevailing thought, though expressed in different language, that our schools are "godless"; that our public schools must necessarily be so; and that the only remedy is to reduce the public free schools to the most elementary functions, and to turn over to the various religious orders the work of the higher education. This essay is published with the avowed object of provoking discussion, and I feel that I am not doing anything unkind or unauthorized by the highest personal regard, when I bring this paper into the arena of our association. And in doing so, I wish to ignore all personal relation to the churches' public religious work, and to speak merely as a teacher, taking up, in all love and courtesy, an eminent preacher's public challenge.

One of the most honored among the public teachers of this State, Dr. Stratton, will discuss in our hearing to-night the question of the proposed Christian College. I wish to speak only of the more elementary grades of our educational work.

Is it true that this work must be irreligious or "godless"? that it must be even agnostic or negative? The law of this State requires us to give frequent lessons in morals and manners, and only forbids the teaching of the dogmas of a sectarian theology. But where shall the line be drawn here? It is safe to say, that those doctrines which teach the existence of a God, a revelation from God to man, penalties for wrong-doing, a spiritual and immortal life—that all these are the well-nigh universal faith of humanity. They are not in any sense

sectarian, so far as their grand outlines are concerned. The word sect means something cut off from the great general mass. Atheism and materialism are sectarian, in the sense that they represent the thought of but a few minds, cut off from the sympathetic relation to the great current of the historic faith and life of men. In this respect, the few have no right to rule the many. In general, they do not attempt to rule them. That man is a whimpering coward who fancies that he must be negative and non-committal upon all questions pertaining to spiritual life, merely because he is identified with the public school work of America. The quibbles that pertain to denominational politics and polemics we may not teach; but morals and manners we must teach, if we fulfill the law; and I believe any Christian teacher to be remiss in duty who does not succeed in conveying to his pupils some impression of the fact that he has a religious faith. The ethics of the Ten Commandments and of the Sermon on the Mount are as absolutely unsectarian as the law of gravitation. I have taught for twenty years, and have always read frequently from some text-book of ethics; thousands of times from the Bible; and in no case did I ever hear one single word of protest. To him who looks for them, nature is full of spiritual lessons; it is one vast parable, teaching of immortality. I have always endeavored to look for such lessons, and to present them to the minds under my charge. Surely there is nothing in California school-law which makes our public school work necessarily "godless."

As to the ethical teaching which we are required to perform, most of us will need some basis of authority, some standard. Shall we use Mr. Spencer's "Data of Ethics"? I am afraid that this would prove strong and unsavory meat for our little ones. Its motives of action would be to them simply incomprehensible. In a recent paper, Mr. Huxley says: "Virtue is undoubtedly beneficent, but the man is to be envied to whom her ways seem playful. And though she may not talk much about suffering and self-denial, * * * she is an awful goddess, whose ministers are the furies, and whose highest reward is peace."

"What would our children think or learn if we should read them this passage, and base upon it a recommendation to be good and "altruistic"?"

Such a motive as this may suffice for Prof. Huxley. He may be strong enough to stand upon this cold, icy, awful height of materialistic science, and listen to the infinite surge of the storm of cyclonic forces that bear onward the constellations and the universe as clouds are borne by the whirlwind; with no belief in a guiding God, and no hope in immortality, he may be able to face the universal doom, and yet be chaste, calm, and strong; but for most human souls the test is too terrible. To these, Mr. Huxley's vision of nature is as the mount that may be touched, shrouded with blackness, yet streaming with fire; sending forth the sound of the trumpet and the voice of words, whereof those who hear them entreat that the words be not spoken to them any more. Mr. Froude has lately uttered sentences better adapted to us and our work. He says, to those who are in their hearts doubtful:

"That food is best for us which best nourishes the body into health and strength; and a belief in a supernatural power which has given us a law to live

by, and to which we are responsible for our conduct, has alone, of all the influences known to us, succeeded in ennobling and elevating the character of man. How much is true of all that men have believed in past times and have now ceased to believe, how much has been a too eager dream, no one can tell. It may be that other foundations may be laid hereafter for human conduct on which an edifice can be raised no less fair and beautiful; but no signs of it are yet apparent. The scientific theory may be correct, and it is possible that we may be standing on the verge of the most momentous intellectual revolution which has been experienced in the history of our race. Men of intelligence, therefore, to whom life is not a theory, but a stern fact, conditioned round with endless possibilities of wrong and suffering, will continue to see in conscience an authority for which culture is no substitute; they will conclude that in one form or other responsibility is not a fiction, but a truth."

These are sayings worth remembering. There is no place where the heart of the child can be so trustful and joyful as when resting upon the sunny slopes of the Mount of Beatitudes, listening to the words of the great Teacher. There is no reason in common sense or in educational law why we should not quote and use these words as spoken by one having authority. I suppose there are a few persons who are willing that our young classic students should be fed upon the obscenities of Terence and Juvenal, and trained in the morals or immorals of Olympus, who would still fear that somehow the freedom of human opinion must suffer because a teacher reads or quotes from the New Testament. In general, however, such do not care enough about the matter to stand in the way. It is a saying safe to utter, that if the common schools are godless, it is because we, the teachers, are godless.

It has been quite the custom for some people to speak words of blame and derision concerning our workers and their work. The pupils are vicious and brutal, the teachers coarse and uncultured, above others, say these critics. We all know that the saying is false, in the form in which it is presented. We are not saintly enough, not far enough above the standard of the society in which we dwell; but surely no teacher or family of teachers has borne such a record of impurity, blasphemy, embezzlement, brutality of speech, and red-handed crime, as that of certain men who claim to be public preachers in *quasi*-religious organizations. If, because of the indifference or positive badness of a few the school shall be pronounced "godless," there is surely equal or greater ground for calling the church "godless." The Sunday-school is intended to be the complement of the day-school, as doing the distinctively religious work; but the teacher who chooses may do much work illustrating and leading up to that of the Sunday-school. For instance, we have seen at the latter much desultory and ill-conducted study of the geography and history of Bible lands. But this work is not in any sense sectarian. Those lands belong to history, to humanity; they are focal points for the love, faith, and reverence of Christian, Hebrew, and Mohammedan alike. The geological structure of Palestine is unique and wonderful. As a secular teacher of geography, I should feel my work to be very incomplete if any one of my pupils should not learn to map these lands from memory, locating the great capitals of old, and tracing the route of the exodus and of the caravans of Solomon.

Dr. McLean seems to think that all forms of religious culture, and all acknowledgment of spiritual things, are simply impossible in any educational institution under State control; that there is an increasing disposition to rule all religious men out from connection with our public schools. I have not found this to be true. For many years I have been working in State institutions for the training of teachers on both slopes of the continent; and have never yet seen the daily session opened without a religious service; in all of these schools I have seen among the students voluntary associations formed for the purpose of religious culture, and always including a majority of the pupils. For the past six years, even here in California, I have been working in such a school, every member of whose faculty is closely related to some one of the great religious bodies, and not wholly idle or aimless in the relation. I do not believe that our honored brother would willingly be unjust, and I only wish, in this public manner, to correct a misapprehension which has been given, through the press, a far greater publicity. I would be glad, if I dared, to bear witness to the patient industry and quiet religious faith which have characterized the great majority of the pupils thus training for the teacher's work.

Our brother hints that all the needs of the State—that sort of public education which tends to good citizenship—are sufficiently subserved by “that much more moderate degree of intelligence which comes from the ability to read, write, and speak correctly.” But this list wholly omits all direction of the young mind toward those mature studies which guide us to the knowledge of law, its rewards and penalties. Humanity is perishing through lack of knowledge. No ignorant man can become so good a mechanic or farmer as the one who has some knowledge of chemistry, physics, and biology. No really ignorant woman can become the mother of heroes, statesmen, or masters of industrial art. The country is not safe unless her sovereigns know something of her constitution and history. Ignorance may, in a certain sense, be the mother of devotion, but it is also the mother of pauperism, drunkenness, vice, every crime and shame, and curse. It is no less true that the nation's safety demands a high standard of spiritual life. When faith in the unseen decays, material destruction is at the door. When Rome came to regard all gods alike, as the obsolete and outworn fruit of human folly, God sent down the north wind. We must educate brain and heart together.

The work of popular education may not be sectarian, but it ought to be, and mainly is, moral and spiritual. No man is fit to teach the young who cannot, in all things, set a wise example for the guidance of youth. No slave to the evil habits and vices which are poisoning the life of the world, has any right to extend the guiding hand to our little ones. We ought to reach down to our work from an ever higher level of virtue, knowledge, and spiritual power.

Finally, by some it is alleged that we are training up generations of educated weaklings, taking out of the ranks of industrial life myriads of men only fit for that life, and giving them a training which they cannot use in the hard struggle for existence. From the conservative wing of our army comes a protest against such an allegation, most indignant and vehement. Bishop Harris, of Michigan, has spoken strong words; and I lately heard a State superintendent,

greatly honored and beloved, giving utterance to quotations from Mrs. Browning's "cry of the children, who were toiling in the poisoned air of factories when they ought to be at school." But then I remembered how Dickens had uttered another cry of the children, no less eloquent: that of little Paul Dombey, crammed to death by Dr. Blimber; the victims of Mrs. Creakle and Professor Squeers; and the millions of youth who, at a premature age, and suffering for physical culture, are conning Greek roots and Latin conjugations, and thereby growing weak in body and dwarfed in soul. The lot of the factory child is truly horrible, but the "barefoot boy, with cheek of tan," growing up in health and contentment on his father's farm, is not a legitimate subject of sympathy or pity. The worthy bishop ought not to talk about money-making as something necessarily sordid and selfish. It is but an incident in the great struggle for life which presses so heavily upon every man and woman in society. Men in high ecclesiastical and professional positions are too likely to look down with a sort of scorn upon the hard toil and narrow economies of the masses, whose labor supplies their bread, and the means for their splendid, cultured ease. But these high places are for but a few. Productive labor must ever be the staple pursuit of men. Human history has been one long agony of struggle, too intense for the feeble and unarmored. The weak have ever gone down. No man or woman is properly educated, whose muscles have not been hardened, and brain and fingers trained and disciplined, by the toil of useful handicraft. If it be true, that the training that has been in the past given to pupils, has made them any the less fit for life's practical work, then we should labor to make good the deficiency and correct the errors. As for me, I feel that while this may have been partially true in the days when the classics and philosophy occupied the field alone, the New Education—the mighty march of physical science—is closing up this, the last joint in our educational armor. The spirit of science is the spirit of unflagging, many-sided work. Good-by to the white, limp, useless hands, the scholar's trailing gown, the brow "sicklied o'er with the pale cast of thought." Welcome to the brown hand, the apron of the craftsman, the hob-nailed shoe of the explorer! The modern scientist is no diletante dreamer. What merely sordid motive could have inspired such superhuman effort as that which guided Stanley through the Dark Continent? What miner ever starved and toiled for gold, as Muir has starved and toiled to learn Nature's secrets in the untracked Sierras, and the virgin Yosemite of Alaska? Gray and Lemmon, Eads, Davidson, Tyndell, Whitney, are men of mighty thews and trained fingers. The spirit of modern science is the very spirit of intense, ceaseless, resistless work. Science has redeemed the schools from the ancient allegation of one-sidedness and unpracticality; and I believe that in the field of uses it is yet to win higher triumphs.

All in all, we may rejoice that there are not many fatal joints in our educational armor. If we work on in the spirit of industry and humility, all will be well with us and with the cause which we are striving to uphold.

RECOLLECT that trifles make perfection, and that perfection is no trifle.—
Michael Angelo.

THE C. L. S. C.

This department is under the editorial charge of Miss L. M. WASHBURN, San Jose, to whom all communications relating thereto must be addressed.

A RING WITHIN A RING.

BY MRS. MARY H. FIELD.

[An Essay read before the San José C. L. S. C., February, 1881.]

Dramatis Personæ.

OPTIMIS, a cheerful gentleman.

PENSEROSA, his wife.

ALLEGRA, their vivacious unmarried friend.

SCENE, a private library in San José. The curtain rises on Optimis and his wife, who are seated in their library before an open fire at early candle-light, Optimis reading aloud, and Penserosa untangling a mass of bright-colored worsteds. The door-bell rings, and Allegra is ushered in. She is warmly welcomed by both, and as she lays off her wrappings a large new book is discovered slipping from the pocket of her water-proof.

"What have you here?" said Optimis, "a new novel?"

"By no manner of means," said Allegra. "Am I not one of the C. L. S. C.s? That is my new 'English History and Literature.' I have so far to come on the horse-cars that I have taken to improving the time; besides, I'm so glad to get rid of those infamous old Romans, that I'm reading the book with cheerful zeal."

"Do you mean to say that you don't approve of the noble Roman?" asked Optimis.

"Yes, I do," answered Allegra, promptly, "and if you approve of him, I'll just resume my rubbers and wraps and depart into the night. Anybody who likes that pack of cruel, bloodthirsty, insatiable marauders and murderers, and gloats over the records of their crimes, (which is all Roman history amounts to) may rob and murder me before the evening is over."

"O, stay and visit Penserosa," said Optimis, amiably, "and there'll be two against one, for she'll agree with you to the fullest extent."

Allegra subsided into an easy chair, and took out her crocheting.

"Yes," said Penserosa, "I do agree with you about the Romans. Nothing can be sadder than to read of their utter absence of humanity. They lived merely to plunder and enslave other nations."

"How they loved Rome!" said Optimis.

"Loved Rome!" echoed Allegra, scornfully. "Rome was just another name for themselves. When patriotism takes such a shape as theirs did, it strikes me as simply a gigantic selfishness—worse than the ordinary form, because it gives the most odious vice of human nature a gloss of virtue."

"Alas!" said Penserosa, "all patriotism has for its basis self-love. Even in our day, do we not often hear '*My country, right or wrong.*' And do we have to go far to find old Roman scorn and hatred of aliens?"

"But we are only to ready too give the foreigner a welcome if he can truly become one of us, heart and life," said Optimis.

"We shall never be quite right, I think," said Penserosa, "till we look upon the whole world as God's world, and all men as our brothers."

Allegra now resumed the thread of her discourse. "Then, there's the noble Roman matron—she was a lovely creature, was n't she? Without the natural affection of a tigress! Delighting to sacrifice her sons for Rome, which was to her just a sort of big municipal fetich—a great idol of brick and mortar, yet endowed with a kind of hideous ravening life, forever stretching out remorseless claws after new victories! Well said Tennyson—

‘Dragons of the prime,
Which tare each other in their slime,
Were mellow music matched with this.’”

"Best thing that could happen to the victims and the dragons," said Optimis.

Both ladies regarded him in amazed silence for a few moments, while he gazed reflectively into the fire, and slowly repeated, "Truly, a wonderful man was Caius Julius Cæsar!" But Allegra, who always found it hard to maintain a lengthy silence, broke out with—

"Then, there is their vaunted literature—all stolen from the Greeks, and such tedious, dreary stuff! I think with a yawn, even now, of the long hours devoted in my youth to Cicero and Sallust and Virgil—hours which I would far better have spent chasing butterflies."

"Would it also have been better for the butterflies?" queried Optimis.

Allegra did not deign to reply, and Penserosa began in her gentle way to talk of Marcus Aurelius Antoninus. "I know him chiefly," she said, "through Canon Farrar's lovely book, '*Seekers after God.*' How beautiful his character was! How pure and solitary, like a single star when the heavens are dark and stormy! How gentle and christian his philosophy! I shall always think that somewhere, somehow, he had heard the '*Sermon on the Mount.*'"

"But why should not God teach such a soul as his by direct inspiration?" said Optimis.

"Well," said Allegra, amiably, "I will grant that, for a Roman, he was remarkably well-behaved, except when he persecuted the Christians; and surely he was a model widower. Think of his according divine honors at her death to such an old termagant as Faustina, and then becoming himself a sort of petrified '*sacred to her memory*' forever after!"

There was a merry laugh, and then Penserosa said: "I have been re-reading Hawthorne's '*Marble Fawn*' in connection with my '*Merrivale's Rome*,' and found it wonderfully helpful. It seems to shed a soft splendor like moonlight over the melancholy ruins of the Eternal City, revealing enough to impress us with reverent awe for its antiquity and greatness, yet greatly obscuring the misery and wretchedness from which the grandeur grew. And then, the

subtle undertone of psychological speculation which pervades the book is to me exceedingly suggestive. I seem to catch a glimmer of hope and explanation in regard to the evil that is in the world."

"Do n't lose sight of it too quickly, my dear," said Optimis.

Penserosa went on, smiling: "How good it was of the Chautauqua Magi to let us turn away from all this hopeless wreck and ruin and read of a 'Plan of Salvation'!"

"And a fine, well-reasoned book it is," said Optimis.

"Yes," said Allegra, "it is; and I, for one, needed to have my faith strengthened. I was getting terribly demoralized."

"God does not forget the world," said Optimis, "he only disciplines it. He counts no pain too sharp, no time too long, which teaches his lessons."

"This painful Roman history has taught me one lesson," said Allegra, impressively—"that is, I'm glad I was born in *Anno Domini* eighteen hundred and—no, Optimis, you need n't smile. I sha' n't tell."

"I fear," said Penserosa, a little mournfully, "we shall not find English history very different from the Roman—not even in modern times. The cruelty and oppression of English misrule in India and Ireland, the recent unnecessary raid against the Afghans, and the bloody details of the Zulu war, do not read as if the record belonged to the nineteenth century of the christian era, but to the *Anno Urbis Condita*, by which the Romans dated their conquests."

"Still the world moves," asserted Optimis, "and if men do not now fight for God and the right, they, at least, put it on their banners, and make themselves believe that there is some great principle involved."

"Well, I'm particularly grateful to the Chautauqua people for the English literature," said Allegra; "it is like coming out of the 'valley of the shadow of death' into the green pastures and beside the still waters of the 'land of Beulah.' Now, too, at last, I'm going to shine out in our circle as a brilliant scholar. I'm going to report six hours a day of reading. Are n't newspapers and magazines and all the new novels English literature? Here's D'Israeli's 'Endymion,' which I've been laboriously reading through. I'll get some credit marks for that. But, joking aside, what a feast is before us! I shall hardly know where to begin, and certainly not where to end. We shall suffer, as the French say, from an embarrassment of riches."

"We read aloud last evening," said Penserosa, "Tennyson's 'Idyls of the King,' and found fresh pleasure in that cluster of quaint, melancholy old legends. They thrill one like Allan Bane's harping. One seems to see the beautiful royal pageant of good King Arthur's court move by in stately procession—Arthur, 'blameless king and stainless man'; Launcelot and Geraint, brave knights gorgeously caparisoned; and those wonderfully fair women—'Elaine the fair, Elaine the lovable, Elaine the lily-maid of Astelot,' poor, frail Guinevere, wicked Vivien—they all pass to dirge-like music."

Allegra seemed to be struggling with a smile, and Optimis said: "Where's the joke, Allegra?"

"I beg a thousand pardons," she said, "but I really could n't help recalling

Toby Rosenthal's stolen picture, and how many people drew me aside confidentially, and said, 'Now, see here, who was Elaine, anyhow?' " They all laughed, and then Allegra said seriously: "Well, last Sunday, I read Mrs. Charles' exquisite little book, 'The Early Dawn,' and I'm going to be a better girl for it. It pictures so perfectly the strength and beauty and comfort of the christian religion to the poor Greek slave toiling under a Roman taskmaster in the mines of ancient Britain; to the noble young Roman matron Valeria in her home at Verulam; to so many hearts and homes, Anglo-Saxon and Norman, down to the poor persecuted Lollards of the fifteenth century, that we must be hard of heart, indeed, not to be greatly moved and strengthened by it. Blessings upon all good books!"

Optimis took down from his library at this point a volume of Emerson, and said: "Hear what our great philosopher says about books—'Consider what you have in the smallest chosen library. A company of the wisest and wittiest men that could be picked out of all civil countries in a thousand years, have here set in best order the results of their learning and wisdom. The men themselves were hid and inaccessible, solitary, impatient of interruption, fenced by etiquette; but the thought which they did not uncover to their bosom friend is here written out in transparent words to us the strangers of another age.'"

"Yes," said Allegra, "but does n't he tell us in that same magnificent essay that perhaps we would be gainers if all the secondary writers were lost, 'say in England, all but Shakespeare, Milton and Bacon'? Just think what an atrocious speech that is! What would the world be to me without Dickens, and Hood, and our Holmes, and Howells? Picture the desolation of Penserosa without Scott, and Tennyson, and George Eliot, and Mrs. Browning! Where would you be, O Optimis! if there were to be an *auto da fe* of Kit North, and Charles Lamb, and Thackeray, and Everett Hale?"

"Yes, indeed," said Penserosa, musingly, "the only trouble is to find time for the thousandth part one longs to read. But what a comfort to know that men's ideals are vastly higher than their deeds; that their thinking is often so much finer than their living; that high sentiments of affection, and faith, and devotion, find an echo in every human heart; that songs and stories of love and heroism are everywhere eagerly devoured. I have been delighted to learn over and over again that men have hearts; that some stern old warrior carried in his breast-pocket, through all his campaigns, some tender volume of love poetry; that a grand old theologian, who seemed to fairly exhale polemics and dialectics, could often be found late at night poring over the airiest of novels; or that an astute politician in his hours of ease found his chief delight in his children's fairy books." After a moment's pause she went on: "And how delightful it will be in this month's reading to retrace the early growth of literature in England; to see the dawn slowly breaking, and hear the morning stars singing together. How lovely is the story of Cædmon, our first English bard. I look with tender reverence on all that he wrote, as if it were, indeed an inspiration. What boundless pleasure is before us if we can read a great deal in accordance with our text-book's suggestion. We must drink deeply at Chaucer's 'well of English undefiled'; and then follow 'sweet Spenser moving through his clouded heaven with the moon's beauty and the moon's soft pace.'"

"I feel positively hungry over such a bill of fare," said Allegra.

"Do n't forget," said Optimis, "to give some careful study to the growth of our language; a most delightful field, and an immense one."

"O, yes," said Allegra, "we've heard of the man who wished he had another life-time to give to the dative case. Ah, if time were only eternity!" she said pathetically.

"Why," said Optimis, "haven't you heard of the venerable old-lady member of the C. L. S. C., who said her object in taking up the course was to prevent being such a fearful idiot when she entered the next world?"

Allegra said she considered this personal, but she would overlook the insinuation, considering its source. "It is almost car-time," she added—"how the evening has flown."

"Hasn't this been a sort of Chautauqua circle?" asked Optimis.

"Why, yes," said Allegra, "we would n't be good Californians if we did n't have a ring within the ring. But, hark! I think I hear my chariot wheels approaching." There was a hasty donning of wraps, and with hurried good-nights the small C. L. S. C. broke up in confusion.

IT IS HOPED through the JOURNAL to make the California C. L. S. C. members acquainted with each other's work, by recounting progress and methods, and occasionally presenting papers read before the different circles. Mrs. Mary H. Field has kindly consented to open the series by publication of her essay, read at the time of transition from Roman to English history and literature. The secretary will be glad to receive reports, and to be advised of all matters of general interest to the California circle.

EDITORIAL DEPARTMENT.

EXAMINATIONS AND PROMOTIONS.

THERE is one feature of our school system which shows little or no progress over the methods of fifty years ago. This is the plan by which promotions are made up through the different grades.

The time was when, on examination day, the committee-man and the village magnates "examined the school." Here, before proud parents, confident pedagogue, and trembling pupils, were tested by oral examination the learning of the teacher and the capacity of those taught. Then the medals were distributed, the boys' "pieces spoken," the self-congratulatory speeches made, and the school dismissed for the ever-welcome vacation. This system had its faults; it had its merits also.

But the next generation claimed to be wiser. All the faults of the oral plan were closely scanned and forcibly depicted. The beauties of written examination

were clearly shown, and that method pressed for general adoption. The attempt was successful; written examinations became the rage.

We have worked now for nearly fifteen years in our graded schools under a system of promotions by written examinations. This system has had a fair trial. It has been tried under every possible condition. The result demonstrates—and we are sure we represent the best educational sentiment everywhere—that it is worse than a failure; it is a great moral and physical wrong to future generations, as well as to the present.

We have spoken our minds freely on this subject before. We have denounced elaborate systems of written examinations as a wrong physically, because they create a frequent abnormal intellectual activity not conducive to physical health. They are wrong mentally, because they lead to the acquisition of the shadow of knowledge for its substance; they discourage the habit of consecutive thought; they run the mind into the groove of question and answer, so narrowing it as to make it incapable of generalization. They are wrong morally, because they offer a constant temptation for wrong-doing; they encourage falsehood in various forms; they inculcate false ideas of the whole object of school life, and place the teacher in an unworthy position before the learner. The latter from many years' experience comes to regard his teacher as a spy, whom it is not disreputable or unmanly to outwit.

But every teacher thoroughly realizes the magnitude of the evil: the question is, what must be the remedy?

It consists, we believe of two factors: First, a closer supervision of the schools by trained superintendents and principals: second, by placing more confidence in teachers; putting more responsibility on them; holding them strictly accountable for the progress of every qualified pupil intrusted to them for further advancement.

The theory of promotions is embodied in the proposition that *a teacher should have the sole power of recommending for promotion only those pupils whom she considers well fitted to do the work of the next higher grade.* These pupils, *and no others*, should be subjected to one strict oral and written examination at the close of the school year. If all or a large proportion pass the examination, it may be considered that the teacher has performed her duty well during the year, and has shown good judgment in her recommendations at its close. If, on the contrary, a teacher recommends many pupils and but few pass, we may reasonably conclude her lacking in some of the prime requisites of a good teacher.

The features of this plan are, briefly: give a teacher a well-graded class; by careful supervision see that she teaches thoroughly and *concentratively*; forbid her such improper aids as frequent written examinations, or constant daily markings—all her time should be spent in teaching; require her, from her own judgment and experience, to name those of her pupils prepared for promotion; test her teaching qualities by one examination, and then promote.

This plan throws a greater responsibility on the class-teacher, but this responsibility will make her general burden all the lighter. Pupils will no longer look to percentages, but to the approbation of the teacher. Now, the child, at the end of the month or quarter, triumphantly points to his per cent., *no matter how obtained*, and with it defies the teacher's knowledge of his incapacity for the work of the next higher grade. Under the system suggested there need be no weekly, monthly, or quarterly reports. The teacher, for her own satisfaction and protection, may keep some kind of memoranda by which to substantiate, if required, her estimate of a pupil's ability. The final examination will justify or condemn; it

will approve her ability as a teacher, or establish the fact that she is deficient in qualities necessary in those who would instruct the young.

TO SUPERINTENDENTS AND TRUSTEES CONCERNING THE TEACHERS' AGENCY.

SUPERINTENDENTS and trustees are aware that there has been a Teachers' Agency in the office of the JOURNAL for nearly four years. It has had not the slightest connection with the JOURNAL, no one interested in our periodical ever having the slightest money interest in the agency. On the contrary, it has proved the source of so much trouble and annoyance that we have determined to forbid any employè of the JOURNAL having any interest in the concern.

It has, however, been represented to us by many teachers, including some superintendents, that as our office is naturally a headquarters for teachers, it is a great convenience to trustees who may wish to make engagements. In this way both teachers and trustees are accommodated.

We have, therefore, permitted MISS J. M. WHITE to occupy one of the offices of the JOURNAL, as a "Teachers' Agency," to be managed by her. Miss White is highly recommended as a capable, earnest business manager, and a refined lady.

She has on hand a list of male and female teachers, including some holding Life and Educational Diplomas. Trustees may depend on it, that none but experienced, successful teachers of good moral character will be sent from the agency while conducted by Miss White.

As heretofore stated by us, the JOURNAL has no money interest in this agency. Teachers will be charged a moderate commission for places secured them by Miss White, a teacher herself, who will not extort money from those who do not get too great compensation themselves. A fair commission for the work and expense involved in conducting the agency (expense for paper, postage, advertising, etc.—work in keeping up an extensive correspondence) is all she will charge. Fuller particulars may be learned from her advertisement in this number of the JOURNAL.

Among Miss White's references may be named, as well-known to trustees and superintendents, State Superintendent Campbell, Dr. Horatio Stebbins, and the editor of the JOURNAL.

PREMIUM ESSAYS.

WE regret that the committee on "Premium Essays" have not yet been able to have a meeting and make awards on the MSS. sent in for competition. An effort will be made during the current month to secure a meeting, and the result announced in our next issue.

THE RECENT MEETING OF THE STATE TEACHERS' ASSOCIATION.

THE preparation of the proceedings of the last State meeting of teachers was left with the secretary for 1880.

We expected to get them in time for our February number. We were disappointed, but were told they would be ready for our March issue. On March 1st, after waiting over a week to hear from the secretary, we were informed that they were not ready, and probably will not be *till June*. Of course, by that time so great a time will have elapsed that the matter will have lost all interest. We are therefore compelled definitely to announce that the proceedings will not be published in the JOURNAL. This is to be regretted, as many valuable papers were read, followed by interesting discussions.

We had depended on and entered into an arrangement for this report, else it would have been prepared by some one connected with the JOURNAL, and inserted long ago.

OMISSIONS.

OWING to the large amount of important matter in the OFFICIAL DEPARTMENT of this month's JOURNAL, we have been obliged to omit considerable local intelligence, as well as reviews of several valuable books. Among the latter we must name particularly, Baldwin's "Art of School Management," from D. Appleton & Co., New York; an abridgement of Guizot's "History of France," from Estes & Lauriat of Boston; several volumes of the "Annotated English Classics, (Shakespeare's plays) by Dr. Henry Hudson, from Ginn & Heath of Boston; Milne's "Algebra" and "The Practical Music Reader," from A. L. Bancroft & Co., San Francisco; and "On the Threshold," by Theodore T. Munger, from Houghton, Mifflin & Co. of Boston. These books, besides several others, are promised a careful and full review in our April number.

THE STATE UNIVERSITY BULLETIN.

IN this issue of the JOURNAL we publish the last bulletin of the State University. From this our teachers will learn that several material changes have been made in the requirements for admission. These changes are not so much in a lowering of the standard—for the faculty have evidently no desire in that direction—but to bring the curriculum of the University into complete harmony with the public schools of the State. We have a full communication on this subject just received from Prof. E. W. Hilgard of the College of Agriculture, which will appear in our April number.

The whole subject is of the greatest importance, and commends itself to the attention of all interested in the welfare of the entire common-school system.

PROGRESS.

THE School Law just passed by the Legislature of California contains a section likely to produce important and beneficent results on the education of the children of the State. If the administration of Superintendent Campbell were marked by no other advance, this alone would distinguish it as the most progressive since the mantle of John Swett descended on his successors.

One bane of our school system, at present, is irregular attendance. It renders fruitless the most systematic plans of the best teachers, and a generous expenditure of the public money. Some idea of the magnitude of the evil may be gathered from the statement that the average length of school attendance for each child in this State is less than two years.

According to the new law, the apportionment of school money is partly based on the average daily attendance for the preceding year. Here is a direct incentive to every teacher—to every parent.

This law will, we believe, strike at the root of the evil. It offers a premium for regular attendance by enlisting the interest of every parent and tax-payer.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

APPORTIONMENT OF STATE SCHOOL MONEY.

Below is given an abstract showing the amount of State school money apportioned to each county on the 21st of February.

The *per capita* is some thirty cents less than was expected. This will be, no doubt, a disappointment to those who have made inquiries concerning the probable amount, and to whom the Superintendent has given from \$7.25 to \$7.30 as his estimate of what it would be.

That estimate would have been very nearly correct but for the unreasonably large delinquencies this year on the part of corporations and other taxpayers, and the great falling off in the amount of poll-taxes collected and paid into the State Treasury.

OFFICE OF CONTROLLER OF STATE,
Sacramento, Cal., February 19th, 1881. }

HON. F. M. CAMPBELL, *State Superintendent of Public Instruction:*

SIR—In compliance with an Act of the Legislature, I have the honor to report as follows:

The securities held in trust for the School Fund by the State Treasurer, consist of bonds of the State of California, amounting to \$1,737,500, together with bonds of different counties of this State, aggregating \$255,900.

The money in the State Treasury belonging to the State School Fund subject to apportionment, is \$1,507,460.09.

Yours, etc.,

D. M. KENFIELD, Controller.

APPORTIONMENT.

The total number of census children between five and seventeen years of age, entitled to receive school money, 215,978; amount per child, \$6.97; amount apportioned, \$1,505,366.66.

Counties.	No. Children.	Amount.	Counties.	No. Children.	Amount.
Alameda.....	15,552	\$108,397 44	Sacramento.....	7,474	\$52,093 78
Alpine.....	112	780 64	San Benito.....	1,538	10,719 86
Amador.....	2,788	19,432 36	San Bernardino...	2,428	16,923 16
Butte.....	3,941	27,468 77	San Diego.....	1,899	13,236 03
Calaveras.....	2,256	15,724 32	San Francisco.....	58,492	407,689 24
Colusa.....	2,965	20,666 05	San Joaquin.....	5,589	38,955 33
Contra Costa.....	3,465	24,151 05	San Luis Obispo..	2,752	19,181 44
Del Norte.....	477	3,324 69	San Mateo.....	2,674	18,637 78
El Dorado.....	2,388	16,644 36	Santa Barbara.....	3,004	20,937 88
Fresno.....	2,231	15,550 07	Santa Clara.....	9,521	66,361 37
Humboldt.....	4,041	28,165 77	Santa Cruz.....	3,779	26,339 63
Inyo.....	405	2,822 85	Shasta.....	2,276	15,863 72
Kern.....	1,263	8,803 11	Sierra.....	1,248	8,698 56
Lake.....	1,674	11,667 78	Siskiyou.....	1,887	13,152 39
Lassen.....	866	6,036 02	Solano.....	4,960	34,571 20
Los Angeles.....	10,602	73,895 94	Sonoma.....	7,242	50,476 74
Marin.....	2,104	14,664 88	Stanislaus.....	1,847	12,873 59
Mariposa.....	958	6,677 26	Sutter.....	1,546	10,775 62
Mendocino.....	3,504	24,422 88	Tehama.....	2,249	15,675 53
Merced.....	1,271	8,858 87	Trinity.....	717	4,997 49
Modoc.....	1,322	8,587 04	Tulare.....	3,447	24,025 59
Mono.....	688	4,795 36	Tuolumne.....	1,845	12,859 65
Monterey.....	3,336	23,251 92	Ventura.....	1,528	10,650 16
Napa.....	3,354	23,377 38	Yolo.....	3,066	21,370 02
Nevada.....	5,090	35,477 30	Yuba.....	2,373	16,539 81
Placer.....	3,050	21,258 50			
Plumas.....	984	6,858 48			
			Total.....	215,978	\$1,505,366 66

FRED. M. CAMPBELL,

Superintendent of Public Instruction.

SACRAMENTO, February 21st, 1881.

AMENDMENTS TO SCHOOL LAW.

There have not been many amendments to the School Law, as will be seen below. Such as have been made will, it is believed, commend themselves to school officers and teachers.

As the bill passed the Assembly with but one dissenting vote, and as it passed the Senate to its third reading on the 2nd day of March, sec. 1552, concerning superintendents' salaries, read as follows:

"SEC. 6. Section 1552 of the said Code is amended to read as follows:

"Section 1552. Each County Superintendent shall receive such annual salary, and his reasonable traveling expenses, as may be allowed by the Board of Supervisors, which shall be paid out of the county general fund in the same manner as other salaried county officers are paid; *provided*, that such compensation shall not be less than a sum equal to twenty-five dollars for each school district in his county, exclusive of traveling expenses, and that he shall be allowed, in addition to his salary, a sum for postage and expressage, payable out of the county school fund, equal to one dollar for each school district; *provided*, that

in incorporated cities each school containing three hundred pupils shall be considered equal to one school district."

At this stage, on motion of Senator Burt of Placer County, the bill was recommitted to the committee, with instructions to strike out the section.

The bill up to this time also provided for the former method of drawing money from the treasury, viz., by the superintendent drawing his warrant direct upon the treasurer. On motion of Senator Hill of Monterey, the committee was instructed to change the bill, so as to provide that the plan followed during the last year should be retained. A substitute was finally offered by Senator Davis of Yuba, which was adopted, and appears in the amendments as found below.

It is a matter of great regret to the Superintendent of Instruction, that the bill did not finally pass with sec. 1552 as amended. It is hoped and believed, however, that in the county government bill, in all probability to be passed during the extra session, the subject will be fairly dealt with. In the bill as passed, sec. 1543 is amended as follows: "It is the duty of the Superintendent of Schools first, to superintend the schools of his county; second, to apportion the school moneys of each school district quarterly; and for this purpose he may require of the County Auditor a report of the amount of all school moneys on hand to the credit of the several school funds of the county not already apportioned; and it is hereby made the duty of the Auditor to furnish such report when so required." The rest of the subdivision remains unchanged.

"*Third.*—On the order of the Board of Trustees, or Board of Education, to draw his requisition upon the County Auditor for all necessary expenses against the School Fund of any city, town, or district. The requisitions must be drawn in the orders therefor and filed in his office. Each requisition must specify the purpose for which it is drawn; but no requisition shall be drawn unless the money is in the fund to pay it; and no requisition shall be drawn upon the order of the Board of Trustees against the county fund of any district, except for teachers' salaries, unless such order is accompanied by an itemized bill showing the separate items, and the price of each, in payment for which the order was drawn; nor shall any requisition for teachers' salaries be drawn unless the order shall state the monthly salary of the teacher, and name the months for which such salary is due. Upon receipt of such requisition the Auditor shall draw his warrant upon the County Treasurer in favor of the parties, and for the amounts stated in such requisitions.

"*Fifth.*—To visit and examine each school in his county at least *once* in a year, and for every school not so visited, the Board of Supervisors must, on proof thereof, deduct ten dollars from the County Superintendent's salary.

"*Sixth.*—To preside over Teachers' Institutes held in his county, and to secure the attendance thereat of lecturers competent to instruct in the art of teaching; and to report to the County Board of Education the names of all teachers in the county who fail to attend regularly the sessions of the Institute; to enforce the course of study, the use of text-books, and the rules and regulations for the examination of teachers, prescribed by the proper authority."

In sec. 1544, the irrelevant reference is changed and the proper subdivision named.

Section 1550 is changed so as to include cities having over *thirty thousand* inhabitants.

Section 1577 is slightly changed to make its meaning plainer.

Section 1593 is amended so that Trustees are to be elected in *June* instead of *May*.

Subdivision thirteen of sec. 1617 is amended by adding, "the books so furnished to belong to the district, and to be kept in the district school library when not in use."

Subdivision fifteen, first line, the word "other" is substituted for the word "adjoining."

Subdivision sixteen is amended so that the Census Marshal shall be appointed on or before the 1st of *May* instead of the 1st of *June*.

Section 1620 is amended to include blackboards and crayons.

Section 1621 as amended is very important, and is given in full:

"Section 1621. The Boards of Trustees and City Boards of Education must use the school moneys received from the State and county apportionments exclusively for the support of schools for that school year, until, at least, an eight months' school has been maintained. If, at the end of any year during which an eighth months' school has not been maintained, there is an unexpended balance, it may be used for the payment of claims against the district outstanding, or it may be used for the year succeeding. Any balance remaining on hand at the end of any school year in which school has been maintained eight months, shall be reapportioned by the Superintendent of Schools as other moneys are apportioned."

"Section 1634. It is the duty of the Census Marshal:

"*First*.—To take annually, between the fifteenth and thirty-first days of May, inclusive, a census of all children under seventeen years of age who were residents of his district on the said fifteenth day of May.

"*Second*.—To report the result of his labors to the Superintendent of Schools, (or to the Board of Education, in cities) on before the fifth day of June in each year."

"Section 1836. *Fourth*.—The Census Marshal shall have power to administer oaths to parents and guardians.

"*Fifth*.—If at any time the Superintendent has reason to believe that a correct report has not been returned, he may appoint a Census Marshal, have the census retaken, and the compensation for the same shall be audited and paid as provided in sec. 1639 of this Code."

Section 1714. In cities not divided into school districts, the library fund consists of the sum of fifty dollars for every *one thousand* children, etc., instead of every *five hundred* as heretofore.

Section 1770 is amended by adding the following: "and all incidental expenses incurred by the Board of Education, including printing, shall be audited and paid as other claims against the general fund of the county; *provided*, the same shall in no case exceed the sum of one hundred dollars per annum."

"Section 1771. County Boards of Education have power—

"*Fourth*.—To prescribe and enforce the use of a uniform series of text-books and a course of study in the public schools, and to adopt a list of books for district school libraries.

"*Seventh*.—To issue diplomas of graduation from any of the public schools of the county, which diplomas shall be designed by the Superintendent of Public Instruction, and distributed as other blanks from his office. Diplomas shall be issued only to pupils who have passed an examination prescribed by the County Board of Education. Such diplomas shall be signed by the president and secretary of the county board, and the principal of the school.

"Section 1775. The board may also, without examination, grant county certificates, and fix the grade thereof, to the holders of life diplomas, California State educational diplomas, California Normal School diplomas, California State University diplomas, when recommended by the Faculty of the University, and State Normal School diplomas of other States; and to the holders of unexpired State certificates of California; and may, without examination, renew certificates previously issued by them, or previously granted in their county; such renewed certificates to remain valid for the same length of time for which the original certificates were granted. County Boards of Education must issue certificates upon the blank forms to be prepared and distributed by the Superintendent of Public Instruction.

"Section 1787. In every city, or city and county, having a Board of Education, there may be a City Board of Examination.

"Section 1788. Each City Board of Examination consists of the City Superintendent of Schools, and four other members, residents of such city, at least, two of whom shall be experienced teachers, elected by the City Board of Education, and holding office for two years.

"Section 1789. The City Superintendent of Schools is chairman of the City Board of Examination.

"Section 1790. The City Board of Examination must meet and hold examinations for the granting of teachers' certificates semi-annually, at such times as they may determine. The place of meeting shall be designated by the chairman. All meetings of the City Board of Examination shall be public, and the record of their proceedings shall be kept in the office of the City Superintendent of Schools.

"Section 1791. Each City Board of Examination has power—

"*First*.—To adopt rules and regulations, not inconsistent with the laws of this State, for its own government, and for the examination of teachers.

"*Second*.—To examine applicants, and to prescribe a standard of proficiency which will entitle the person examined to a certificate, and to grant city certificates of three grades: (1) High school certificates, valid for six years, and authorizing the holder to teach any primary, grammar, or high school in any such city; (2) city certificates, first grade, valid for four years, and authorizing the holder to teach any primary or grammar school in such city; (3) city certificates, second grade, valid for two years, and authorizing the holder to teach any primary school in such city.

"*Third*.—To grant special city certificates of the first grade, valid for four years, upon such special studies as may be authorized by the City Board of Education of such city.

"Section 1792. The City Board of Examination may also, without examination, grant city certificates, and fix the grade thereof, to the holders of California life diplomas, California educational diplomas, California State Normal School diplomas, California State University diplomas, (when recommended by the Faculty of the University) unexpired State certificates, city certificates granted in other cities of California, and the life diplomas and State Normal School diplomas of other States; and may also, without examination, renew, and, for immoral or unprofessional conduct, profanity, intemperance, or evident unfitness for teaching, revoke, any certificate previously granted in any such city, or city and county.

"Section 1793. The holders of city certificates are eligible to teach in the cities in which such certificates were granted, in schools of grades corresponding to the grade of such certificates; and, when elected, shall be dismissed only for violation of the rules of the Board of Education, or for incompetency, unprofessional, or immoral conduct. The holders of special city certificates are eligible to teach the special studies mentioned in their certificates, in all the schools in the city in which such certificates were granted.

"Section 1794. The members of the City Board of Examination shall receive such compensation as may be allowed them by the City Board of Education, payable out of the City School Fund.

"Section 1858. * * * The School Superintendent in each county must apportion all State and county moneys as follows:

"*First*.—He must ascertain the number of teachers each district is entitled to, by calculating one teacher for every seventy school census children, between the ages of five and seventeen years, or fraction thereof of not less than twenty school census children, as shown by the next preceding school census.

"*Second*.—He must ascertain the total number of teachers for the county, by adding together the number of teachers assigned to the several districts.

"*Third*.—Five hundred dollars shall be apportioned to each district for every teacher assigned it; *provided*, that to districts having ten and less than fifteen census children, shall be apportioned four hundred dollars.

"*Fourth.*—All school moneys remaining on hand after apportioning five hundred dollars to each district having fifteen school census children or more for every teacher assigned it, and after apportioning four hundred dollars to districts having not less than fifteen school census children, must be apportioned to the several districts having not less than thirty school census children, in proportion to the average daily attendance in each district during the preceding year..

"Section 1830. The Board of Trustees of any district may, when in their judgment it is advisable, call an election, and submit to the electors of the district the question whether a tax shall be raised to furnish additional school facilities for the district, or to maintain any school in such district, or for building one or more school-houses, or for any two or all of these purposes; *provided*, that where a tax has been collected for the purpose of building a school-house, and the erection of said school-house shall not have been commenced within one year from the time said tax was collected, the custodian of said money shall return the same to the parties from whom said tax was collected.

"SEC. 27. This Act shall take effect immediately."

The changes made in the Senate necessitated sending the bill back to the Assembly and the appointment of a Committee of Conference from each House. That from the Assembly was appointed on Thursday evening, March 3rd, and that from the Senate on Friday morning.

The committees met on the last morning of the session, Friday, March 4th. It being understood what amendments would be agreed upon by these committees, parties set up all of Thursday night, and the bill was enrolled by six in the morning.

The State Printer had in the meantime set it up in law form; and so, as soon as he was informed of the amendments, made the corrections, and struck off the printed copy, which goes to the Governor.

At 11 o'clock the Enrolling Committee retired to compare the bills, and at 11:45 reported the same correctly enrolled. The Governor signed it, and the session having been extended to 5 o'clock P. M., it was, with others, reported back by his Excellency to the Assembly as approved.

AN ACT TO ESTABLISH A BRANCH STATE NORMAL SCHOOL.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. There shall be established in the County of Los Angeles a school to be called the Branch State Normal School of California, for the training and educating of teachers in the art of instructing and governing in the public schools of this State.

Sec. 2. The trustees of the State Normal School are hereby appointed and created trustees of the said Branch Normal School, with full power and authority to select a site for the permanent location of said Branch Normal School in the County of Los Angeles. Said trustees shall, within thirty days after the passage of the Act, examine the different sites offered by the people of the County of Los Angeles for the location of the Branch Normal School buildings, and select therefrom a suitable location for said Branch Normal School buildings; and the site selected by them shall be and remain the permanent site for the Branch State Normal School; *provided*, that no buildings shall be erected in the County of Los Angeles until a deed in fee simple of the land selected by the Board of Trustees of the State Normal School shall be made to the State.

Sec. 3. Said Branch State Normal School shall be governed and regulated by the same laws now governing and regulating the State Normal School.

Sec. 4. The sum of fifty thousand dollars is hereby appropriated out of any moneys in the general fund of the State not otherwise appropriated, for the building of said Branch State Normal School.

Sec. 5. The Controller of State shall draw warrants from time to time, as the work shall progress, in favor of said Board of Trustees of the State Normal School, upon their requisition for the same; *provided*, that the cost to this State for the erection of said Branch Normal School buildings shall not exceed the amount herein appropriated.

Sec. 6. The said buildings shall be erected, and the moneys hereby appropriated therefor expended, under the direction of the Board of Trustees of the State Normal School. And all labor performed upon said buildings shall be done by the day's work.

Sec. 7. This Act shall take effect and be in force from and after its passage.

AN ACT CONCERNING THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. The Medical Department of the University of California shall hereafter be known and designated as the "Toland" Medical Department of the University of California, and all degrees, diplomas, scholarships, and records of the said department shall be made out, and all proceedings in connection therewith shall be conducted in and by such name and designation.

Sec. 2. This Act shall take effect from and after its passage.

AN ACT TO PROVIDE FOR THE IMPROVEMENT OF NORMAL SCHOOL SQUARE, IN THE CITY OF SAN JOSE.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. The sum of twenty-five thousand dollars is hereby appropriated out of any moneys in the general fund not otherwise appropriated, for the improvement of the Normal School Square in the City of San Jose.

Sec. 2. The said moneys shall be expended in grading, draining, and fencing the said square, in planting the same with suitable trees and shrubbery, and in graveling the necessary walks. It shall be expended under the direction of the Board of Trustees of the said Normal School, in whose favor the Controller of State shall draw his warrants from time to time, as the work shall progress, upon the requisition of the said board for the same.

Sec. 3. This Act shall take effect immediately.

AN ACT TO ADD EIGHT NEW SECTIONS TO THE POLITICAL CODE, TO BE KNOWN AS SECTIONS 1880, 1881, 1882, 1883, 1884, 1885, 1886, AND 1887, RELATING TO THE ISSUANCE OF BONDS BY THE TRUSTEES OF SCHOOL DISTRICTS TO RAISE MONEY FOR BUILDING PURPOSES, AND TO PROVIDE FOR THE PAYMENT OF THE SAME.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. A new section is added to the Political Code, to be known as section one thousand eight hundred and eighty, to read as follows:

1880. The board of trustees of any school district may, when in their judgment it is advisable, call an election, and submit to the electors of the district whether bonds of such district shall be issued and sold for the purpose of raising money for building one or more school-houses in such district, and furnishing the same, and for liquidating the indebtedness of school-houses already erected.

Sec. 2. A new section is added to said Code, to be known as section one thousand eight hundred and eighty-one, to read as follows:

1881. Such election must be called by posting notices, signed by the board, in three of the most public places in the district, for not less than twenty days before the election; and if there is a newspaper published in the county, by publishing such notice therein not less than once a week for three successive weeks.

Sec. 3. A new section is added to said Code, to be known as section one thousand eight hundred and eighty-two, to read as follows:

1882. Such notice must contain—

1. The time and place of holding such election.
2. The names of three judges to conduct such election.
3. The hours during the day (not less than six hours) in which the polls will open.
4. The amount and denomination of the bonds; the rate of interest, and the number of years, not exceeding twenty, the whole or any part of said bonds are to run. The amount of the total number of bonds issued shall not exceed five per cent. of the taxable property of the district, to be based upon the assessment roll of the preceding year.

5. That at said election the ballots must contain the words "Bonds—Yes," or "Bonds—No"; and that if two-thirds of votes contain the former, the bonds will be issued, otherwise not.

6. That the returns of said election will be made to the board, and by it canvassed, and the result declared at one o'clock P. M. on the seventh day after such election.

7. That, except as otherwise in this Act provided, the election and canvass thereof will be held in all respects as nearly as practicable in conformity with the general election law in force at the time of such election.

Sec. 4. A new section is added to said Code, to be known as section one thousand eight hundred and eighty-three, to read as follows:

1883. After said election, and at the time specified, the board must meet and canvass said returns, and if it appears that two-thirds of the votes cast at said election was in favor of issuing such bonds, then the board shall cause an entry of that fact to be made upon its minutes, and shall certify to the board of supervisors of the county all the proceedings had in the premises, and thereupon said board of supervisors shall be and they are hereby authorized and directed to issue the bonds of the county to the number and amount provided in such proceedings, payable out of the building fund of such district, naming the same, and pledging the faith of the county that the money shall be raised by taxation upon taxable property in said district for the redemption of said bonds and the payment of the interest thereon.

Sec. 5. A new section is added to said Code, to be known as section one thousand eight hundred and eighty-four, to read as follows:

1884. The board of supervisors, by an order entered upon its minutes, shall prescribe the form of said bonds, and of the interest coupons attached thereto, and must fix the time when the whole or any part of the principal of said bonds shall be payable, which shall not be more than twenty years from the date thereof.

Sec. 6. A new section is added to said Code, to be known as section one thousand eight hundred and eighty-five, to read as follows:

1885. Said bonds must not bear a greater amount of interest than eight per cent.; said interest to be payable annually; and said bonds must be sold in the manner prescribed by the board of supervisors, but for not less than par; and the proceeds of the sale thereof must be deposited in the county treasury to the credit of the building fund of said school district, and be drawn out for the purpose aforesaid, as other school moneys are drawn out.

Sec. 7. A new section is added to the said Code, to be known as section one thousand eight hundred and eighty-six, to read as follows:

1886. The board of supervisors, at the time of making the levy of taxes for county

purposes, must levy a tax for that year upon the taxable property in such district for the interest and redemption of said bonds, and such tax must not be less than sufficient to pay the interest of said bonds for that year, and such portion of the principal as is to become due during such year, and in any event must be high enough to raise annually, for the first half of the term said bonds have to run, a sufficient sum to pay the interest thereon; and during the balance of the term, high enough to pay such annual interest, and to pay annually a proportion of the principal of said bonds equal to a sum produced by taking the whole amount of said bonds outstanding and dividing it by the number of years said bonds then have to run; and all moneys so levied, when collected, shall be paid into the county treasury to the credit of the building fund of such district, and be used for the payment of principal and interest on said bonds, and for no other purpose. The principal and interest on said bonds shall be paid by the county treasurer, upon the warrant of the auditor, out of the fund provided therefor; and it shall be the duty of the auditor to cancel, and file with the Treasurer, the bonds and coupons as rapidly as they are paid.

Sec. 8. A new section is added to the said Code, to be known as section one thousand eight hundred and eighty-seven, to read as follows:

1887. If the board of supervisors of any county, which has issued bonds under the provisions of this Act, shall fail to make the levy necessary to pay such bonds or interest coupons at maturity, and the same shall have been presented to the county treasurer, and the payment thereof refused, the owner may file the bond, together with all unpaid coupons, with the State Controller, taking his receipt therefor, and the same shall be registered in the State Controller's office; and the State Board of Equalization shall, at their next session, and at each annual equalization thereafter, add to the State tax to be levied in said county, a sufficient rate to realize the amount of principal or interest past due and to become due prior to next levy; and the same shall be levied and collected as a part of the State tax, and paid into the State treasury, and passed to the special credit of such county as bond tax; and shall be paid by warrants, as the payments mature, to the holder of such registered obligations as shown by the register in the office of the State Controller, until the same shall be fully satisfied and discharged; any balance then remaining being passed to the general account and credit of said county.

Sec. 9. This Act shall be in force from and after its passage.

AN ACT TO APPROPRIATE MONEY TO REIMBURSE THE UNIVERSITY OF CALIFORNIA FOR MONEYS HERETOFORE APPROPRIATED TO THE ENDOWMENT FUND THEREOF, WHICH MONEYS HAVE BY MISTAKE BEEN WITHHELD THEREFROM AND APPROPRIATED TO OTHER STATE PURPOSES.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. The sum of forty-seven hundred and eighty-five dollars is hereby annually appropriated to the University of the State of California out of any moneys in the State treasury not otherwise appropriated.

Sec. 2. This appropriation shall continue, and the said sum shall be annually paid to said University until the State elects to and does return to the endowment fund of said University the sum of seventy-nine thousand seven hundred and fifty dollars heretofore appropriated, but by mistake withheld therefrom and used for other State purposes.

Sec. 3. This Act shall be in force from and after its passage.

AN ACT TO AMEND SECTION 1857 OF THE POLITICAL CODE.

The People of the State of California represented in Senate and Assembly, do enact as follows:

Section 1. Section one thousand eight hundred and fifty-seven of said Code is hereby amended so as to read as follows:

1857. No assessor, tax collector, or county treasurer must charge or receive any fees or compensation whatever for assessing, collecting, receiving, keeping, or disbursing any school moneys, but the whole moneys collected must be paid to the county treasurer; *provided*, that said assessor or tax collector shall be allowed for services rendered the commission provided for in section three thousand eight hundred and sixty-two of said Code.

Sec. 2. This Act shall take effect immediately.

The Superintendent craves the indulgence of his correspondents whose letters have not yet been answered. They have necessarily accumulated on his hands during the last two or three weeks, but shall all now receive immediate attention.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN MARCH.—*Mercury* is an evening star until the 12th, when he sets nearly with the sun. From this time to the end of the month he is a morning star, but on account of his close proximity to the sun is not in a position favorable for observation. He is stationary among the stars on the 1st and again on the 23rd. *Mars* is a morning star, rising on the 12th at 5 h. 6 m. A. M., and on the 22nd at 4 h. 53 m. A. M. He is near the moon on the 26th. *Venus*, *Jupiter*, and *Saturn* will continue to be evening stars during the month as they were during the month of February. Jupiter and Saturn will retain about the same relative position they have occupied for several weeks, while Venus, in her onward motion around the sun, will appear to rise higher and higher in the heavens, passing the two planets just mentioned, and setting some time after they do. She will be near the moon on the 4th, at her least distance from the sun on the 6th, and at her greatest brilliancy on the 27th.

FROM a recent debate in the House of Lords, it seems the importance of teaching science is beginning to be recognized among the English nobility. According to *Nature*, the Earl of Spencer made use of the following remarks: "There was no more important matter than the application of science to the art of agriculture. Great attention had of late years been very properly called to the great aid which science gave to the various classes of manufacturers and producers; and that principle applied with quite as great force to agriculture as to any other art. That was especially the case at the present moment, when the country was inquiring narrowly into the whole of our agricultural system. If science could enable an agriculturist to produce more from the land than he had hitherto done, it would add another to the many useful things it had been the means of accomplishing. It had been decided by the Science and Art Department, in consequence of the pressure for accommodation for science classes, not to have a special class for agricultural science this year, seeing that botany, geology, and chemistry, which were so intimately connected with agriculture, were taught separately."

A FRENCH explorer, M. Lecart, who is at present on the banks of the Niger, writes that he has discovered a new vine, which promises to be of great economic value. He

says the fruit of the vine is excellent and abundant, its cultivation very easy, its roots tuberous and perennial, while its branches are annual. It can be cultivated as easily as the dahlia. He himself had been eating the large grapes of the vine for eight days, and found them excellent, and he suggests that its culture ought to be attempted in all vine-growing countries as a possible remedy against the phylloxera.

ATTENTION has been called by Herr Holtz to an optical illusion in looking at geometrical figures, whereby they appear shorter from right to left than they really are; a square, for example, appearing more or less as a rectangle, and a circle as an ellipse. In consequence of this fact, when we draw such figures, according to eye measurement, we make them too long horizontally. The reason of the illusion Herr Holtz considered to be that, in common life, we much more frequently encounter bodies than geometrical figures, and so are disposed to accept the outlines of such figures for the outlines of actual bodies. Now, we see more of a body in a horizontal direction than in a vertical, because we see with two eyes, and these are in a horizontal line. The outside of a ball appears to us really as an ellipse, because from right to left we see more than half the ball. When we see a true circle this seems horizontally shortened, because we take it for the outline of a ball, and if we draw a circle, we unconsciously give the outline of a ball.

A FUNGUS similar to that which Dr. Salisbury first noticed in the blood of persons suffering from malaria, is now announced as constantly present in the blood of consumptives, and therefore is suspected as being the cause of this dreadful malady.

PROFESSOR HOFMANN, in a communication to a Berlin paper, recommends, in order to produce cold by the evaporation of ether, placing a test-tube half filled with water in a cylinder containing ether, so that the ether reaches somewhat above the surface-level of the water. A current of air being sent through the ether, the water is soon changed to a transparent cylinder of ice.

SIR W. THOMPSON considers that the most "prominent and remarkable biological result" of the four years' cruise of the Challenger is the final establishment of the fact "that the distribution of living beings has no depth-limit, but that animals of all the marine invertebrate classes, and probably fishes also, exist over the whole floor of the ocean."

THE new astronomical observatory at Rochester, N. Y., is to have the third largest telescope in America. It will be twenty-two feet in length, and have an object-glass sixteen inches in diameter.

A SCIENTIFIC examination of the Ibaraki mountain range in Japan has resulted in the discovery of marble in different colors. One mountain is believed to be a mass of white statuary marble, and in another place black marble of the finest description was found.

NEWS RECORD.

OUR record extends from JANUARY 28th, to FEBRUARY 28th inclusive.

Foreign and Domestic.

A steamer capsized near Singapore, India, causing great loss of life.

From Africa comes the news that peace has been concluded between King John of

Abyssinia and the Khedive of Egypt. At the other end of the continent, however, the revolt of the Transvaal Boers and the Basuto negroes against the authority of the British Cape Colony, has led to constant skirmishing and several sharp engagements. In spite of the remonstrance of

English Liberals and sympathizing Hollanders, Premier Gladstone announces his intention of quelling the revolt before he will consider terms of peace. The Boers declare that they will not consent to be British subjects on any terms. Their Dutch blood is up, and thus far the scales of victory have turned in their favor in nearly every engagement. There is a rumor that the British Government is disposed to treat with them on the basis of a recent proposition they have submitted.

Mount Baker, according to a Victoria dispatch, continues to throw out dense volumes of smoke and sparks of fire.

John W. Young, son of Brigham, was arrested at Denver, Col., on a charge of bigamy.

Gortschakoff will resign in April, having completed twenty-five years as Russia's Chancellor.

It is now learned that the Peruvian capital was captured by the Chileans through the treachery of Peruvian officers, who encouraged the soldiers to pillage and murder.

The session of the Prussian Diet will close on the 23rd instant.

Secretary Evarts yesterday, at New York, formally presented to the United States, in behalf of the Khedive, the Egyptian obelisk.

Greece continues her preparations for war.

Droze has been elected President of the Swiss Confederation, in place of Anderwert, deceased.

An electric light company has been organized at Detroit, with a capital of \$500,000.

Fernando Wood, for many years member of Congress from New York City, is dead.

The Southern Pacific Railroad will cross the Rio Grande two miles above El Paso, and will be completed to the Gulf of Mexico by October next.

The British have been defeated by the Boers with heavy loss, among the killed being General Colley.

The marriage of Prince William and Princess Augusta took place at Berlin recently.

Educational.

Thomas F. Harrison, and Norman A. Calkins were elected as first assistant superintendents; John H. Fanning, William Jones, Arthur McMullin, and Alex. J. Schem, were elected as second assistant superintendents, of New York City at the same salary as last year.

Harvard University has received \$100,000 for the construction of a new law-school building.

The following is a comparison of the attendance and expenses of the New York City and Boston schools:

	New York.	Boston.
Primary pupils.....	70,321	20,898
Prim. teachers' sal's..	\$1,033,089	\$385,534
Cost per pupil.....	15 00	18 45
Grammar pupils....	42,273	27,387
Gram. teachers' sal's	\$1,268,000	\$772,000
Cost per pupil.....	3200	28 20
Total expenditure...	\$3,415,822	1,512,366

Out of 358 colleges in the United States, 153 admit women—most of them western institutions.

Twenty-one thousand dollars has already been contributed to the retiring fund for the professors of Harvard College.

Personal.

Many great men miss their "Firsts" at the university examinations. Matthew Arnold took only a "Second," Cardinal Newman a "Third," and Ruskin a "Fourth."

Mr. James Russell Lowell, it is said, would like to resign the mission to England, and return to his professorship at Harvard College.

Professor Franklin Carter, of Yale, late of Williams, has been elected president of the latter institution, *vice* president Chadbourne resigned.

Professor Darwin, though past seventy and confined to his bed, continues to prosecute his researches. He is said to be an inveterate reader.

William Chambers, who started the *Chambers Journal* nearly forty-nine years ago, is one of the oldest periodical publishers in Europe.

General Notes.

A new cable has been laid between Ireland and Newfoundland, making four separate cables owned and operated by the Anglo-American Telegraph Company.

The province of Tarpaca, Peru, has eight factories in operation which produce annually 350,000 pounds of iodine. Three other factories are being constructed. The iodine is extracted from water of saltpeter.

In Melbourne, Australia, the phylloxera has made its appearance in the vineyards. A select committee recently paid a visit to the vineyards, and found the insects visible even without the aid of a magnifying glass. This will be a great calamity, as the vines soon cease to bear, and no remedy has yet been found.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

In the estimate for this year's expenditures is \$60,000 for a new building for the Girls' High School. The architect has been ordered to prepare plans for a twenty-four room school-house, and bids for construction are soon to be invited. On the principle, that half a loaf is better than no bread, we must rejoice that the Girls' High School is, at last, to have a central and commodious building. But the policy of our different school boards in California strikes us as essentially wasteful. Year after year flimsy wooden structures are erected, unsightly without and within, some scarcely comfortable, all subject to rapid decay, and requiring constant expenditure to keep in reasonable repair. These buildings are discreditable to city and county alike, which boast of a great system of education, and a liberal, progressive population. It is a fact, that there are not ten decent school-buildings in California. As for San Francisco, there are just three—the Lincoln and Denman grammar buildings, and the Grant primary school-house. There is not a third-rate western city which does not excel us in this regard. Furthermore, we believe the present policy highly extravagant. There is no city of its size in America where the bills for repairs on school-houses are so heavy and continuous as here.

When we contrast the example of Boston, which has just completed its new building for the English High and the Latin High School, at a cost of \$812,000, with the custom of our San Francisco Boards of Education, we hide our heads in shame.

We believe this board should spend the \$60,000 available this year in erecting one wing of a handsome and substantial brick structure. Next year an equal amount can, we doubt not, be secured to complete the building. The talk about earthquakes and dampness in this climate is all nonsense. We believe the next generation would applaud such action of the board; the common sense and intelligence of the community will indorse it now.

The amount demanded by the Board of Education to carry on the schools for the year 1881 is \$871,000.

The new school law passed by the last Legislature provides that teachers shall not be dismissed, unless for immoral or unprofessional conduct or incompetency.

Miss Sallie Rightmire was confirmed as principal of the West Mission School, one of the large new schools recently erected, at the last meeting of the board. Miss Rightmire well deserves her promotion. A splendid disciplinarian and thorough teacher, she also inspires her pupils with the most affectionate regard.

Mr. D. Levy, special teacher of modern languages in the Boys' High School, has obtained leave of absence on account of ill-health. Prof. Paul Pioda, formerly of this school, and late of the State University, takes his place.

The next graduating exercises of the Girls' High School will be held in the evening, and in the largest hall in the city, so as to accommodate the large crowd of parents who annually gather at these exercises.

The vacancies in the Board have been filled by the appointment of David Bush and Peter Deveney. Mr. Bush is the philanthropist so well known in this city in connection with the "Bush Fund" for the improvement of the Park. Mr. Deveney is a prominent citizen of the third ward.

Miss Mary L. Fuller died suddenly of heart disease on Tuesday, December 28th, 1880. She was a teacher of the fourth grade in the Eighth Street Grammar School, where she was a general favorite with her associates. In her death the department has lost one of its best teachers. Her associates in the school have most heartily subscribed to the following:

"It is with feelings of deep sorrow that we are called upon to mourn the loss of our dear friend, Miss Mary L. Fuller. By

her earnest and conscientious endeavor to do her whole duty in all her relations with her pupils and associate teachers, by her kind and generous disposition, and by her cheerfulness and buoyancy of spirit, she had endeared herself to all in the school. Our school has lost one of its ablest teachers, and our circle one of its brightest ornaments. It is with more than ordinary sorrow that we bow to the will of an inscrutable Providence; and there will ever be in our hearts a tablet sacred to the memory of her, whom but to know was to love."

Signed by the principal and assistant teachers of the Franklin (Eighth Street) Grammar School.

SAN LUIS OBISPO COUNTY.

Messrs. H. Woods and J. L. Raines are the recipients of educational diplomas. The schools are just beginning to open for the summer. The city schools will resume work on Monday, the 21st inst. Two of the best teachers, Mrs. C. A. Stanton and Miss Sadie M. Holloway, have resigned, and the vacancies have been filled by the appointment of Mrs. E. P. Rogers and Miss Clara I. Churchill, both excellent teachers. Mr. J. L. Raines has resigned his position as teacher in Estero District, and taken employment in the flourishing mercantile house of James Cass & Co., at Cayucos. Thus it will ever be until teaching is properly recognized and compensated as a profession; our best teachers, many of them, will continue to drift into more remunerative fields of labor. Miss Osborn opened the Paso Robles School on the 8th inst., and Superintendent J. F. Beckett is dispensing mental stimulus to more than sixty pupils in the flourishing district of Arroyo Grande. Most of the schools will be open by the 1st of April. Nearly all are engaged by first-class teachers.

SUTTER COUNTY.

This county has been flooded, and schools generally have been closed for the past three weeks. F. W. Emerson, who succeeded S. E. Graves, at Yuba City, is doing well. Good school; supplied with \$1,500 apparatus. Mr. Emerson is a normal school graduate from Pennsylvania.

Mr. Hewitt, in Clay District, is doing

good work, and is retained for the coming year.

YOLO COUNTY.

The teachers of Yolo County have organized a Teachers' Institute class or association. Object, mutual improvement and acquaintance. They meet on the third Saturday of each month, and not only have a pleasant reunion, but a profitable time, as the day is devoted to discussions, selections, and a short scientific lecture. The officers are: J. I. McConnell, president; Miss Della Jones, vice-president; Sue E. Grant, secretary; C. E. Dingle, treasurer.

SONOMA COUNTY.

Miss Maggie Young has been appointed one of the teachers in Petaluma, taking charge of the Hill School, formerly under Miss Colvin.

Mr. Albert Green has a school at Bo-dega.

Mr. William Kelly has the Eureka School.

Miss Clara Mock has a school in the upper part of the county.

Miss Georgie Reynolds has the school at Donahue, Miss Alice Munday at Penn's Grove, Miss Edee Holton at Occidental.

SANTA CLARA COUNTY.

The pupils of the First Ward School of San José, Miss Kate Blythe, principal, celebrated the seventy-fourth anniversary of the birth of Henry W. Longfellow on the 27th of February with appropriate exercises, including well-rendered selections from his writings. The exercises reflected great credit on Miss Blythe and her assistants.

MONTEREY COUNTY.

The Superior Court of this county has been engaged in the trial of the case of Barbara M. Hook, by her guardian, vs. James Augustus Hall. The plaintiff in this case is a young girl of 17, who attended the public school at Mountain District, of which the defendant was the teacher. The complaint charged that while in these relative positions in September, 1879, the defendant, under promise of marriage, seduced the plaintiff. The jury, after a short deliberation, brought in a verdict for the plaintiff, with damages at \$2,000.

NAPA COUNTY.

A young man in this county named Maddox has been reported as demented on account of his failure in securing a teacher's certificate.

MERCED COUNTY.

A case of small-pox at Merced had the effect of closing all the schools, and the vaccination of the pupils.

LITERARY NOTES.

Messrs. Van Antwerp, Bragg & Co. have determined to confine their business to the manufacture and sale of the *Eclectic Educational Series* and a popular line of blank books. They have disposed of their miscellaneous stock to Messrs. R. O. Clarke & Co., whom they cordially recommend to their patrons.

Scribner for March has a number of interesting points. The second part of Mrs. Burnett's piquant novelette, *A Fair Barbarian*, will be eagerly read. Ericsson's *Destroyer* and her *New Gun*, is the subject of a paper, by Mr. Charles Barnard; in *Musical Possibilities of America*, Mr. Theodore Thomas writes practically of vocal and instrumental culture. Never-before-engraved portraits of Charles and Mary Lamb, from old paintings, embellish a short paper by Mr. John Arbuckle. In London with Dickens, is a chronicle of the localities of Boz. Still further variety is given to the number by a second paper of *Recollections of American Society*, by Mrs. S. W. Oakey; an illustrated paper on *Striped Bass*, by Mr. Francis Endicott; an account of Protestantism in Italy, by Rev. Washington Gladden; more *Notes of a Walker*, including discussion of Shakespeare's natural history, by John Burroughs; *A Dangerous Virtue*, a striking short story, by Mr. H. H. Boyesen; the fifth part of Mr. Schuyler's "Peter the Great as Ruler and Reformer," illustrated by Blum, Nehlig, and others; and the concluding paper of *Glimpses of Parisian Art*, with studio sketches by Jourdain, Alfred Stevens, Rico, Egusquiza, Madrazo, and others, and interesting personal material.

The most striking things in the March *St. Nicholas* are Mrs. Oliphant's admirable paper giving the touching story of Lady Jane Grey (to be followed in April by the companion article on Mary, Queen of Scots); an illustrated account of two sturdy Icelandic boys and their desperate Encounter with a Polar Bear; Mary Jane describes Herself, an illustrated autobiography of a Sunday-school scholar; a new scientific in-door amusement called *The Magic Dance*; an incident of Adelina Patti's childhood, when traveling in the United States, in 1854, with Ole Bull and Maurice Strakosch; and the four serials. There are more than fifty illustrations, a page of music, and an Anglo-Chinese story for the boys and girls to interpret.

The March-April number of the new bi-monthly magazine, *Education*, published by Mr. Bicknell, of Boston, will be a remarkable educational publication.

The leading article is by Prof. Seeley, of England, the distinguished author of *Ecce Homo*; it is entitled *The British Race*. William Jolly, one of H. M. inspectors of schools, has an able article on *Real Education: its Principles and a Little-known Chapter in its History*. Mr. Lovejoy, of Washington, discusses Richard Grant White's attack on public schools, from a Southerner's standpoint; and Superintendent Luckey, of Pittsburgh, Penn., takes a north-side view of Mr. White; Dr. Fellows, of Iowa, gives a practical review of Didactics as taught in his University. Dr. Humphreys of Boston, Dr. Gregory of Illinois, Prof. Leighton of Brooklyn, N. Y., and others, contribute valuable papers to this number.

The *Atlantic Monthly*, for March, contains among other interesting articles, *Friends: A Duet*, Elizabeth Stuart Phelps; *Story of a Great Monopoly*, H. D. Lloyd; *The Portrait of a Lady*, Henry James, Jr.; *The Seven Days*, Frances L. Mace; *The Genesis of Genius*, Grant Allen; *The Wives of Poets*, William M. Rossetti; *The End of the War*, Theodore Bacon; *Random Recollections of England*, Richard Grant White; *Boston to Florence*, Oliver Wendell Holmes; *The Eleventh Hour*, Katherine Carrington.

A. H. McDonald, agent for the New England Publishing Co.'s Journals, request all who subscribed to either *Education*, *National Journal*, or *Primary Teacher*, to forward their names and address to him at 208 Montgomery street, S. F., as he fears that one or two names are accidentally mislaid.

Messrs. Ivson, Blakeman, Taylor & Co. have leased the large and spacious buildings, 753 and 755 Broadway, N. Y., and removed their business to the new location about the first of February. The immense business of this house is increasing each year. They deserve their combined prosperity.

Littell's Living Age.—The numbers of the *Living Age*, for the weeks ending February 12th and 19th, respectively, have the following noteworthy articles: Jacob Van Arteveld, the Brewer of Ghent, *Edinburgh*; A Glimpse at Newfoundland, *Nineteenth Century*; Plutarch, and the Unconscious Christianity of the First Two Centuries, *Contemporary*; Emperor Alexander's Reforms, *Fraser*; The Invincible Armada, *Gentlemen's Magazine*; Story of Queen Louise of Prussia, *Chambers' Journal*; Frank Buckland, *Pall Mall Gazette*; Haroun Alraschid, An Apology for the Snow, and the Storm, 1881, *Spectator*; The Plane Tree, *Hardwicke's Science Gossip*; with instalments of *The Freres*, Don John, and Visited on the Children, and Ilouscha, a Shadow of Russian Life; also, the usual amount of poetry.

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SAN FRANCISCO, APRIL, 1881.

No. 4

LESSONS IN BOTANY.

BY VOLNEY RATTAN.

[Teacher of Natural Sciences, Girls' High School, S. F.]

MUSTARD AND ITS RELATIONS.

THE mustards are vagabonds in a family of plants otherwise respectable, though not aristocratic. Cabbage, cauliflower, turnip, radish, and other members of the order help in a humble way to build up and keep in repair the bodies of men, while wallflowers, gilliflowers, candytuft, sweet alyssum, honesty, etc., modestly appeal to our sense of the beautiful for an estimate of their worth. In consideration of a pot of greens and the usual condiment for our corned beef, we might grant mustard the right of the ordinary tramp to the highways; but the invasion of our gardens and fields is more than an equivalent, and the intruder is voted a nuisance. Two distinct species of mustard are very common on this coast, viz.: black mustard, (*Brassica nigra*) and smooth mustard (*Brassica campestris*). The latter is merely a vagrant form of the Swedish turnip, and may be distinguished from the former by its smooth, stemless leaves, smaller flowers and longer pods. The former is more common in wheat-fields; the latter frequents the suburbs of cities and villages. Smooth mustard, on account of the simplicity of its flowers and its early appearance, is an excellent subject for a first lesson in botany. Supply each pupil with a stem of flowers, and by judicious questions bring out the following facts:

The oldest flower grows lowest on the stem, the buds forming the center

of the bunch. Each flower has four erect outside leaves inclosing four larger yellow leaves which bend outward. In the center of the flower is a little greenish stem surrounded by six yellow-headed stems, two of which are shorter than the others. See that this much is told by each pupil while looking at the flower. Next day—by all means *next day*, for there *is* time—devote fifteen minutes to learning the names of these parts, viz., there are four sepals, four petals, six stamens, and one pistil. For the third lesson let the pupils point out all the facts they can discover as to shape, position, etc., of the parts of the flower, calling the organs by name. Tell them that the yellow heads of the stamens are called anthers, and draw their attention to the pollen dust which may be rubbed off from the anthers in the newly open flowers. Show them that the pistil grows to become the seed-pod, but say that this growth depends upon the pollen dust which must by some means be placed upon the top of the pistil. Tell how this may be proved. Ask the pupils to examine other flowers, and to bring such as have a plan of structure like the mustard. The discovery that wild radish and several garden flowers belong to the mustard family will surely follow. Some one may find a prostrate herb with solitary yellow flowers in the axils of pinnately divided leaves—the graceful *Tropidocarpum*. Most likely the plant here figured formed a part of the first bouquet of wild flowers plucked by little hands for the school-ma'am. Its white, often delicately pink-

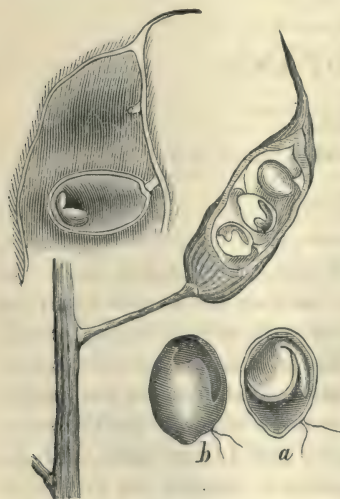


Fig. 1.

a. Young radish-seed (*Raphanus sativus*) cut in halves to show the half-grown embryo. *b.* Same, with younger embryo seen through the seed coat (*a* and *b* magnified). *c.* Stem and pod of radish, natural size, showing two seeds with partly grown embryos. *d.* Partly grown embryo in a lupine seed (magnified).

Fig. 2.—*Cardamine pauciscela*.

tinged flowers are among the first to return thanks for the winter rains. On the coast, the rose-purple *Arabis* is one of the most conspicuous of early flowers. A little later the western wallflower, a coarse, rough, plant, puts forth its orange flowers.

The smooth mustard, *Cardamine*, and a few other cruciferous plants, have a peculiar way of assisting the bees in cross-fertilization. These insects, in their visits to flowers in search of honey, unavoidably carry pollen from one flower and rub some of it off on the stigma of another; but, in case the stigma has already received pollen from the anthers of its own flower, this second application is useless. To understand how fertilization is effected in the mustard, examine the anthers in a bud which is nearly ready to open. It is easy to see that the side of the anther next to the pistil is unlike the outside. Farther investigation shows that the pollen always escapes from the side which in the bud is next to the pistil. Now the anthers of the four long stamens touch the stigma, and if they discharged the pollen while facing it, most of the flowers would be self-fertilized. But observe closely the open flowers. The anthers of each pair of stamens which standing erect in the bud faced one way—toward the stigma—now, by a quarter turn, one to right, the other to the left, stand back to back with bowed heads. The pollen shaken from their faces by the wind cannot fall upon the stigma, which must wait to be fertilized by pollen borne by bees from other flowers. The short stamens remain facing the style, but the stigma is far above their reach.*

Later in the season, study with your pupils the growth of embryos in radish seeds. The seed coats attain nearly their full size before the germ is visible in the nutrient liquid. Hold the seeds up to the light on the point of a pin, that the interior may be viewed through the semi-transparent skin. (See *b*, fig. 2.) First the radicle attains nearly its full size, then the cotyledons continue growing until they fill the seed coat. A similar development may be observed in lupine seeds (see *d*, fig. 2); or, indeed, in any seeds, but most satisfactorily in the radish. In many seeds the embryos never grow enough to fill the seed coat, and the nutrient matter around them hardens into what botanists call *albumen*. When the seeds are planted the *albumen* absorbs water and becomes food for the embryo in its germinating growth.

SUBJECTS appealing mainly to the *reason* and *judgment* belong to the advanced course of instruction.—*Johannot*.

THE study of our own language should be the groundwork of daily exercises, thoughtfully planned and carefully executed, from the first steps in education onward to the last day of professional preparation for the business of life.—*Russell*.

* This curious fact cannot have escaped the notice of botanists; but, so far as I know, has never before been published.

CARE OF THE TEETH PRACTICALLY CONSIDERED.

By W. H. ROBINSON, A. M., D. D. S.

[Suisun, Cal.]

THE old savant who gave us the maxim, *Noce te ipsum*, little realized its importance; still less did he realize how slow mankind would be in applying it even in those practical matters on which our health and comfort depend. All knowledge about ourselves is important, even if some of it is not of much practical utility. It is well enough to teach pupils the anatomy of the pancreas and liver. Yet, this knowledge, as understood by the people, is of little utility in keeping these organs healthy. But in the case of organs accessible like the eyes and teeth, knowledge of their care is very important; because its continual application is necessary in keeping these organs healthy. We are quite sure we speak truth when we say the teeth suffer more from neglect than any other part of the body. We abuse our stomachs, but seldom neglect them. More than half of the population never clean their teeth. More than three-fourths of all school children never clean their teeth. Nearly one-half of all the ills that afflict humanity, in the way of toothache, loss of the teeth, diseased gums, etc., is the result of this neglect. Why people so neglect their teeth is a problem we have often tried to solve. There is a universal dread of toothache and tooth-extraction. These are monitors that *persuade* many to give some reluctant care to their teeth; not so much because they value their teeth as because it hurts to get rid of them.

Possibly the reason that many place so little value on their teeth, results from the fact that our Creator seemed to regard them of so much consequence that we are supplied with successive sets, and, in the shedding of the first set, we become accustomed to losing teeth. We lose our twenty baby teeth with no evil result. In this way, we get used to losing teeth, so that many regard it as a matter of course. Few parents or children know the difference between the baby or the permanent teeth, and the result is, that often the most valuable masticators of the second set are lost before all the baby teeth are shed. Let the dentist try ever so much to impress on the average parent the importance of the first permanent teeth to their children, and they heed him as would the duck should he tell it not to swim. The result is, that children's teeth are neglected to an extent that is fearful to contemplate; and they are practically taught that the teeth are of little value, and the best thing for them is to let them alone till they ache beyond endurance, and then have them pulled out. The following incident came to our knowledge on evidence that leaves no doubt but that it is true: A lady in a backwoods district went to a doctor who had recently located in her neighborhood, to have a tooth extracted. He extracted her tooth and charged her a dollar. She objected to the fee as being too much, saying she never paid but "four bits" before. The doctor said that was his fee, and that he would not lower the dignity of the profession by charging less; but, if

she was not satisfied, he would pull teeth till she had value for her money. That woman did then and there, in order to get the worth of her dollar, have two more good teeth extracted. Now do not laugh at her and call her a fool. Many of you who read this, treat your teeth little better.

"O! I can get a new set for \$10," is the *unanswerable* argument many give for neglecting their teeth. And they are met by a class of human, or rather inhuman vipers, who say: "Yes, read our advertisements; come to our soporific gasometer establishments; take a nap, and you wake up with all your teeth out absolutely without hurt or pain; and by our patent-steam-New-York-eastern cheap-John process, we put in a set of brilliant dentures that will eat and talk better than natural teeth." The number of people who believe and patronize these frauds is astonishing. On my honor as a man, I saw a merchant's wife of Oakland, and a lady of average intelligence, greatly pleased because "to-morrow she was going to have her teeth out *and a nice new set in.*" She had but two decayed teeth in her upper jaw, and not so badly decayed but that any dentist could restore them to practical usefulness. Dr. Gaft, one of the first dentists of the world, recently said in the American Dental Association: "I greatly desire that something might be done by law, or in some other way, to arrest the wholesale slaughter of teeth that prevails to such an alarming extent. In every city there are places where they make the extraction of teeth a business. I sometimes get teeth from these establishments for the use of students, and I am pained to see the number of good teeth among them that should not have been extracted. Every man who takes out teeth in this way is a criminal." Perhaps our readers will say, "Well, that is their own business, and if people are foolish enough to have their teeth pulled out, they must take the consequences." We admit the force of this remark. Yet, the law wisely interferes to protect the ignorant from the gambler, and to prevent children from growing up in ignorance; and certainly the duty of the educator of to-day is to impart knowledge of all kinds so freely to the young, that soon general intelligence will be a surer protection against fraud than legal enactments. If three-fourths of all the school children in our State receive any correct information about the care of their teeth, our school teachers must impart it to them both theoretically and practically. It is certain, beyond question, that the children need this instruction, and we are certain the teacher cannot devote a half-hour each month in any way to benefit the children as much as in telling them how to take care of their teeth. Ask the children in any of your schools, either the highest or lowest grade: "How many of you have had toothache?" All hands go up. "How many of you have decayed teeth?" Again all hands go up. Should what we here say strike you as inappropriate, look carefully at your pupils' teeth. Note the crooked, rotten teeth, diseased gums, and filthy mouths, and I know you will soon notice a decided improvement in the *complexion* of your own teeth, and receive a strong impetus to improve the sanitary condition of the mouths of your scholars. A few children have good teeth, but the number is very small. No one can do so much to give the coming generation good teeth as our present school teachers. In a talk to a class of fifty young men and women in one of our California colleges, we asked all who had good reason to

believe all their teeth sound to raise their hands. One hand went up. An examination of that young man's teeth afterward showed several of them decayed. No matter about exact figures; one thing is certain, nearly all have bad teeth—bad to an extent that seriously interferes with their health and comfort. The fact we want to especially impress on our readers is, that nearly one-half of all toothache, diseased gums, rotten and lost teeth, is due directly to the careless and filthy habits of not keeping our teeth and their surroundings clean. This neglect and its consequences are transmitted from parent to children, till only one or two in every hundred have sound teeth, and fully one-half the people have teeth so bad that they seriously impair their health. Many of these mouths, like the sepulchers of old, are full of “dead bones and all uncleanness.” The breath that passes through them carries putrefactive inhalation that diseases the lungs and poisons the blood; and their exhalations—whew! Not merely our grandmothers and fathers wear “store teeth;” maiden beauty, while in its teens, smiles through dental art. The sweet caress of lovers' lips loosens porcelain incisors; and the young husband is horrified when he finds in the wash-dish those pearly teeth that so coquettishly peeped through the smiling lips of his lady-love.

Artificial teeth are good in their place; so are wooden legs, glass eyes and cotton; but limbs and organs with the glow of vitality, and the dexterous cunning that nature gives, are far better. Did the evils we have referred to stop with the loss of the teeth and the disfigurement resulting therefrom, it would be bad enough, and yet this is but a small link in the chain of evil consequences. Bad teeth mean imperfect mastication, imperfect digestion, imperfect assimilation and nutrition.

“From nature's laws whatever link you strike,
Tenth or ten thousandth, breaks the chain alike.”

Bad teeth break the first link in the great nutritive chain, and, of course, impair all others. It is true, beyond doubt, that many people live and enjoy a comfortable degree of health, who have lost their teeth. Equally true is it that many do the same who have lost an eye or a leg; many also die or have their health marred by the loss of an eye or limb, and the same is true of the loss of the teeth.

OUR whole system of instruction requires an honest, thorough, and candid revision. It has been for centuries the child of authority and precedent. If those before us made it what it is by applying to it the resources of earnest and fearless thought, I can see no reason why we, by pursuing the same course, might not improve it.—*Wayland*.

It makes one shudder to think of the trash which scholars have been compelled to learn in connection with the simple studies of grammar, geography, and arithmetic, to say nothing of the waste of labor in connection with classical studies and the higher mathematics.—*Chadbourne*.

AN ERROR OF JUDGMENT.

BY CHARLES M. DRAKE.

Pretty little boy of six
 In his seat at school,
 Whittling out two pointed sticks—
 'T was against the rule.
 Very bad! Very bad!
 Boys should not do so.
 This the pretty little boy
 Very well did know.
 Teacher hearing 'rithmetic,
 Did n't seem to look;
 Still his eyes are very quick.
 Sly the glance he took.
 Very sly! Very sly!
 Little boy, beware!
 Now you smile, but soon you'll cry,
 If you do n't take care.
 Little boy looks innocent—
 Sticks between his toes—
 Up his foot, on mischief bent,
 Toward a neighbor goes,
 Very slow! Very slow!

Neighbor's pants are thin;
 And one stick, so sharp, did go
 Through them like a pin.
 Neighbor yells, and, rubbing hard,
 Says that something bit.
 Teacher does n't say a word,
 But takes down a whip,
 Very long! Very long!
 Up it goes in air,
 Down it comes — no doubt 't is
 wrong—
 On the feet so bare.
 Tender little boy of six,
 Sobbing, weeping sore,
 Vows that he will put sharp sticks
 'Twixt his toes no more.
 Very sad! Very sad!
 (MORAL.)
 Ought to 've had on shoes,
 And the teacher should have had
 Moral suasion views.

THE UNIVERSITY AND THE HIGH SCHOOLS.

BY E. W. HILGARD.

[Berkeley, Cal.]

THE changes recently made in the conditions of admission to the freshman class of the University, as indicated in the bulletin recently issued, indicate a tendency to open its doors somewhat more widely, and without exacting absolute uniformity of preparation, to those whose proficiency enables them to attend its courses with profit to themselves, and without detriment to the higher education which the University is primarily intended to promote. The propriety of emphasizing more especially the need of good preparation in the mother tongue, and of admitting such better preparation as an offset to certain other studies which the student may more readily "make up" during his university course, is hardly to be questioned by any one who understands the frequent deficiency, in this important point, of graduates even, whose time is usually too much occupied by the numerous other studies to enable them to acquire that practice which alone can make good grammar and rhetoric an unconscious habit.

More important than this, however, is the proposed change in relation between the University and the high schools of the State, by which these two independent but thus far unconnected branches of the State educational system are to be brought into more direct connection and co-operation. This is expressed in the following resolution of the Faculty of the University of Michigan:

"The continuity of the studies in the local schools of the State and in the University, suggests a remark on the working of the plan of school visiting and inspection adopted by the Literary Faculty ten years ago, and usually called the "diploma system." According to this plan, candidates for admission to the literary department, holding the diploma of any Michigan high school, which has been visited on the request of the school board by an examining committee of the Faculty, and approved, is admitted to the University without examination. This innovation on old customs, like all innovations, and chiefly because it was an innovation, was met at once with severe criticism, and especially by some distinguished educators in the older colleges; fearing as was alleged, that such system would bring down the standard of scholarship. Experience, however, just as in the case of the admission of women to the University—an innovation made at the same period—has proved that there was no ground for fear, except that the thing was new, and not practiced in the mother colleges. Two facts are to be noted among the results: first, the standard of preparation in the high schools, if affected at all, has been elevated rather than lowered; second, the State system of education has become a reality. It is obvious that there can be no system, properly so called, without an actual and living connection and communication among its members. By calling for the visiting or examining committees of the Faculty, the high schools have been brought into that vital connection with the University which makes them parts of an actual organism, and, so far as concerns these schools, our State system no longer exists merely on paper.

"There are now sixteen of the most flourishing and important high schools of the State holding this relation to the University; and no one can look into the condition of these schools without feeling satisfied that this connection has had the effect both to animate their students to more earnest effort, and to encourage and strengthen the teachers; while it has brought about a more perfect unity of plan and method in the schools of the State in general. In short, it gives to our schools, otherwise isolated, a bond of union and a center of life. We are convinced, as the result of an experiment of ten years, that this co-operative plan, especially if entered into by the few remaining schools, and thus perfected, will give a character of consistency, solidity, strength and efficiency to the educational work of the State, which will leave nothing further to be desired but the uninterrupted operation and movement of the system."

There is nothing novel or startling in this provision; on the contrary, the high schools being the natural feeders of the University, their courses should connect with and lead directly up to the freshman class of the various university courses. This they actually do in continental Europe and in a number of the States of the Union. The arrangement represents the natural sequence of

things, and it would seem necessary to give reasons for its being otherwise. If both classes of institutions are what they should be, the certificate of the completion of the course of the high school should be the patent of admission to the University.

Good reasons for requiring an independent entrance examination to the University are found in the want of uniformity, both as to kind and quality, of the high-school courses in different portions of the newer States. Those located in cities have the advantage of those in the more sparsely settled districts, both as regards the disposal of funds and the quality of the teachers that they can afford to employ, and, as a rule, send students better prepared. Yet even these, subject as they are to frequent and often arbitrary changes in their corps of teachers, are by no means always to be relied upon for uniformly good performance of their functions through a series of years. Hence, the University, being the more stable, and desiring to attain a fixed or rather a rising standard for its graduates, declines to admit into its classes indiscriminately all those who may have been allowed to pass the final examinations of the several high schools, differing so widely in their means and arrangements for instruction.

The obvious disadvantage of this state of things lies in want of any direct connection and co-operation between the two independent branches of public instruction. Many unsuccessful attempts have been made in other States to remedy this evil by legislation; it being one of those problems of which only time and the progress of population and general education can successfully give a general solution. But there is no reason why the natural connection should not be at once established by mutual consent, where it is known that the proper level is likely to be maintained in graduating high-school students. Other things being equal, the teacher who has known and instructed a scholar during several years, has better means of knowing his or her qualifications than the examiner who sees him only under the stress of a formal examination for an hour or two; and when, in addition to the certificate of the high school, the applicant must bring also the personal recommendation of his teacher, there seems to be little likelihood that more or even as many imperfectly prepared students will be admitted to the University than is now done under the examination system. Moreover, it should be remembered, that according to the University regulations, the first term in the University is always probationary only; the matriculation not being perfected until that period has been creditably passed.

The proposed system of periodic or annual visitations by committees of the Faculty, intended to insure the maintenance of the proper standard in the kind and quality of instruction, can hardly fail of accomplishing the object in view, if the gentlemen so appointed do their duty in the premises without fear or favor. If they do not do so in this matter, they are not likely to be more conscientious or successful in their entrance examinations. In either case the injury to the University classes would be about the same.

The great advantage to be gained by the new system is the establishment of a better understanding and more direct relations between the high schools and the State University, such as have been most happily brought about, for

instance, in Michigan, where the same plan has now been in operation for many years. On the one hand, it has served to imbue the high schools even in the remote districts of the State with a spirit of progress, and of sympathy with the higher education of the University, influencing materially their methods of teaching, and causing mere routine work to be replaced by efficient instruction. It has caused the youth being educated in these high schools to look directly forward to their own State University for their higher education, instead of Harvard and Yale, and thus reciprocally the usefulness and influence of that institution has greatly increased. And it may be stated as a matter of fact, that of the students received at Ann Arbor from the high schools upon diploma under this system, a smaller percentage sloughs off during the four years' course than is the case with those passed upon entrance examination alone.

Thus, apart from its reasonableness *a priori*, there seem to be excellent antecedents for the action taken by the Faculty of the University in this matter. That some action was called for by the constantly increasing number of high-school graduates entering the University, can hardly be questioned. And if, as may be hoped, the high schools and the University can be made to co-operate and "connect" with each other by this measure, without lowering the present standard of admission, a great good will have been done to both parts of the State educational system.

It may not, perhaps, be superfluous to allude in this connection to the assertion made in some quarters, that the action taken by the Faculty in this matter is a "blow at the private preparatory schools." Such was assuredly not the thought of the Faculty, and it is questionable whether any such effect is likely to flow from the measure adopted. In any case, it is clearly the duty of the University, as a State institution, to consider primarily its relation to the State system of public education. The existence of so many private and denominational high schools alongside of those maintained at public expense is not flattering testimony on behalf of the latter class of institutions; although, as a matter of fact, the causes of this state of things are in a great measure independent of the intrinsic excellence of the instruction given in either, and have their source largely in social and religious conditions. If the policy of free public education is to be continued in this State, then the more this system is perfected and united the better. If a change in the general system should be thought desirable, it is still difficult to see why a similar connection of the University with the preparatory schools would not be called for by parity of reasoning, although the want of even approximate uniformity in the courses of study of the several schools would then render the duties of the examining committee of the Faculty somewhat arduous. This, as well as the private jealousies likely to result from the necessary discrimination between rival schools, renders the application of this system to them a matter of considerable difficulty, although, as a matter of fact, such arrangements do exist in several States. In the case of the public high schools, it simply results in a salutary emulation, and a gradual elimination of such teachers as persistently fail to bring up their students to the desired point.

CHATS WITH COUNTRY TEACHERS.

BY CHARLES H. SHINN.

ALTHOUGH the JOURNAL has announced topics which at some future time I am to consider, yet, being rather ponderous, they will keep quite safely for awhile—at least until these chats are finished. These are to be chats with country teachers, because it is hard to feel demonstratively affectionate toward the educational machinery of this city, or toward those advisory editorials in the newspapers, which tell teachers what to teach, and how to live, and with what menial stipends to be contented. On the whole, the honors of metropolitan positions do not appear overwhelming. The teachers in rural districts escape these disadvantages, and may, if they will, do more original work than the city teachers can. Remembering visits in days of old to teacher friends in many a pleasant district of valley, Coast Range, and Sierra, these chats have taken shape in my thoughts.

Considering the position of this State and its resources, the person who is not glad because of its coming prosperity, and does not realize how hopeful, in every material sense, is the present outlook, is hardly worthy of the name of teacher. And the marvelous variety of soil and climate here is one of the charms. There are modest brown school-houses hid in redwood clumps on the sunny cliffs beside the gray peaks and near the companionship of the sea, where gull and plover move past, and gusty winds marshal the unwilling clouds, and the yellow sands are flecked with foam and strewn with ocean treasures, while the deep, sweet murmur of the sea is as a benediction. There are school-rooms in the midst of green fields in fair, fertile vales, thick with orchards just budding full of busy life, and dotted with thriving villages. Other school-houses appear lost in the wide, dreary plains and unmeasured pasture-lands breaking slowly, in the blue distance, against the sparsely settled foot-hills which rise into the snow-peaks and changeless Alpine desolation. Some are in merry-hearted mountain towns by swift mountain rivers, near the rushing flumes and the yellow, crumbling banks, and the stately traditions of earlier California. Others hide in forests of silver-neededled pines, where the pink manzanita flowers are blown through the open doors; or they lie in narrow ravines, where winding paths lead up the ridges; or they look down on inland lagoons where teal and widgeon float, and hunters, in winter, push their punts through swaying tule stems. So one might go on describing the country school-houses of California. In just such places—some of them lovely, some desolate, some picturesque—ardent young men and women, fresh from college or training-school, find themselves placed, to solve the question of personal bread and butter, and the deeper problems of heroic days and of work done for its own divine sake.

Teachers in these lonesome places, mourning your narrow opportunities and grieved because your work has not been better understood, it is of you this hour that I would think, as of brothers and sisters whose names I have not known, whose faces I have not seen, but in whose earnestness I have set un-

yielding faith. There are many country districts in which ill-paid teachers toil day after day, year after year, with patience, courage, charity—trying to make the world better because of their lives. Never mind about the failures, the dregs and drags of the profession, the shallow and foolish who seek for no life-work, and find neither hope nor music in the year's imperial march. They for themselves have chosen the ashen apples of Sodom, which shall be dust on their lips. Only real knowledge of real things can go to the roots of life, bringing honor and security. Half knowledge of any sort is a slippery bargain.

Gentle reader, we will venture to believe that you know all about teachers' examinations and are posted on normal methods, can tell what to see on a four-bit piece, and are properly drilled in numbers of things which are not worth enumerating here. Let us further suppose that you, being duly and sensibly equipped with quite a stock of educational machinery, and being young, and loving life as it is your blessed right to do, have oft-times wondered what were the ultimate meanings of all this technical framework of teaching, and have tried, quite too successfully, to shut it up in the school-house and bury it out of sight. Then, bright, young teachers, full of noble impulses, try to grasp the under-thought which explains the needs of these lesser agencies. Think of your own life a moment, and consider how much the gift of more physical health, more knowledge of art, language, books, humanity, more patience, faith, and simplicity, would have widened your outlooks forever. And this is a universal truth: the machinery of the school-room is only used because it does, in right hands, help to develop certain tangible results. Grammar, history, and other studies are by wise persons used as instruments, but foolish ones set them up as fetiches, and dance about them in profane orgies. We have all of us known absurd and troublesome teachers whose faith in some single text-book was unblenching and unqualified. Beware of the teacher of one text-book, for he is apt to be priggish, stupid, or mildly insane.

If text-books and appurtenances, my brave teacher friend, are to be mere instrumentalities in doing certain work, what, let us ask, is the nature of that work? In the heart and soul of each child is a germ of beauty and power. Old truth this may be; yet think, oh youth-guider, how each human nature holds forces of strength and passion, flames mild and beautiful, great currents which ebb and flow continually, and hungers unspeakable for other than mortal food. Consider, too, that no one of us has ever gauged our own capacities either for sorrow or joy, for defeat or victory; nor has there come to one of us—so wonderful a force is the human soul—other than the merest glimpse of our own possibilities. To fitly reverence these deep-sealed springs and dormant powers is an essential of true teaching. Each child is its own self, not to be marred nor wrested from harmonious development, but to be helped, spiritualized, and enlightened with firm will and loving friendliness, until it chooses right and duty by virtue of its own victories aforetime.

If such are the aims of school-room work, how inadequate seem the text-book materials. But they are to be interpreted first, and the character of that interpretation will depend upon the teacher's range of knowledge and faculty of wise leadership over other minds. The whole armory of attainable facts

must be at one's command. As the skillful dentist, when he wishes to make a gold filling, has dozens of pointed, rounded, crooked, and angular instruments within reach, using first one and then another in rapid touches, so upon the truth the teacher wishes to impress all sorts of agencies must be brought to bear. As the blacksmith heats his iron in the forge, taps it lightly, then shapes it with swifter and harder blows, watching all the while, until sword-blade for war, or plowshare for peace, is made; so the teacher's thoughts must glow with flame and warm with inspiration, and the teacher's will must hammer out king's weapons and the tools of coming world-builders. Do you not remember, teacher friends of mine, how the northlands are filled with legends of magic weapons? Deep under the mighty crags, or toiling in caves of the sea, workers in metals and weavers of strange spells wrought "Durandal" for Roland, "Excalibar" for King Arthur, and the "Branstock Wrath" for Sigurd the Volsung. Even so, I think the rune-wrought weapons for the hands of coming heroes are being forged to-day in hidden places by the teachers of our land. Be sure that if you rightly arm these boys and girls they will never forget you. Dreams of yours they will bring to fulfillment; seed-thoughts of yours will ripen under their care; to realms you pointed out their conquering ships shall sail.

There is a story which I have told before, and yet its truth and beauty seem to make it worth retelling for the sake of lonesome and wearied country teachers. Once, (I shall not tell when nor where) an ambitious youth began to teach school in a little town in the mountains. He loved books and friends, but he was quiet and shy, so that few people knew how tuneful the man's whole nature was. After long toil and many haps he earned the money to publish a volume of essays which he had written in his leisure hours. Into the wide and busy world it was launched like a leaf on the sea, and went out of sight without seeming to cause a ripple or wake the ire of a single reviewer. Like Thoreau, this author brought back his unsold books and piled them away. Perhaps if he had been strong enough to try the contest once more he might have won, but he did not seem to think of that. He merely went back to his school-room, and grew a little sadder and quieter as the years passed with their many changes. Boys grew up under his care, and some of them became known in trade, politics, and literature. He kept a list of all the pupils he had ever taught, with private comments on each one's character, and notes of their course in life. Sometimes some one of them would write to him with glad affection, but for the most part it must be confessed that they thought little about him.

As he grew bent and gray, his daily life crystallized into fixed channels. He had a few old books—Plato, Montaigne, A'Kempis, Bacon, Jeremy Taylor, Herbert, Lamb, Wordsworth, Emerson, and other meditations. Now and then he had visits from the friends of his boyhood, or early pupils grown rich and famous; and when they talked with him, strangely enough, instead of feeling sorry for his isolation and poverty, they felt sorry for themselves instead, and looked upon his as the happiest life. Daily he walked out among the people, and watched their toil with kindly interest. He was not often angry;

but once, when some village boys were torturing a poor animal, the mingled pain and wrath of his tone haunted them for hours.

At last the time came that he fell sick, and when he found the end was near, he smiled more than was his wont. They brought him the walnut writing-desk he had used so many years, and from it he took the manuscript of his long-forgotten book and a cluster of faded violets, and with these in his hands he died, smiling as a child forgiven. Then there were a few old people in the village who remembered a fair, pale maiden, who sang in the choir many summers before, and who for many winters had rested beneath the mountain snows, but in whose garden the purple violets she loved were each spring blooming as of old. Slowly then the hearts of men were stirred with a dim sense of their loss, and the pure, kindly teacher is yet remembered by many an humble fireside. It is said that a millionaire came up from the valley to place a granite monument over the resting-place of his old teacher; but when he saw the villagers' memorial, he went away again, saying that there was no need of his money. It was the children's gift, and these were the carven words: "The world is better because of his life."

PEDAGOGIC PERCOLATIONS.

BY MRS. AURELIA GRIFFITHS.

[Principal of Union Primary School.]

BELIEVING that no teacher is too old to learn new methods of teaching, or wise enough to have exhausted all methods, I take especial pains to ask the successful teacher how success was reached.

Astonished by the improvement of an eighth grade in spelling and writing, I found, upon inquiry, that the teacher is in the habit of fixing certain dry facts in the child's memory by fastening it to a little attractive story.

We all know how children love stories, and every student of the human mind understands the value of association as a help to memory, and my wonder was and is, that I had not thought of the method, nor met with it in all my long experience.

I inclose a short sketch by the teacher, who protests that it appears silly when reduced to writing, and begs that her name may not be used. No doubt, like the Kindergarten or famous Quincy system, it will require the magnetism of a live teacher to make it successful. However, if it fails, I can only say as the old woman did, who vainly tried to teach her neighbors how to make good cake: "It must all be in the stirrin' of it." A word to the wise is sufficient; others will never learn.

GUESS.—A man named Mr. *G* owned a large garden, and next door lived a little boy named Master *U*. This little fellow liked sour apples; so he stole

into the garden. Then *g* came out of the garden and caught hold of *u*, and pulled his little *e*, which stands for ear, which made him scream so loud that two little bull-dogs named *ss* came out and barked, when all at once the bell rang, and *g u e ss* ran away.

QUIET.—In a rich man's house in a beautiful city worked an old, old Chinaman named *q u i*, and in a poor wash-house down by the wharf lived his little boy, whom the bad boys called *e t*. This little boy always cried, so one day his father took him up to the rich man's house to see if he would change and stop crying; and as soon as he got there—what do you think?—he became *q u i e t*, quiet.

WHO, WHICH, WHAT, WHILE, WHISTLE.—Five little boys left their homes early one day to try and earn their own living—five poor little boot-blacks. It happened that they were all called *Willie*, and you know “*w*” stands for *Willie*. One of these little fellows was called *Willie Ho*, or *w h o*, who. The next, *Willie Hat*, or *w h a t*, what. The next, *Willie Hich*, or *w h i c h*, which. The next, *Willie Hile*, or *w h i l e*, while. The next, *Willie Histle*, or *w h i s t l e*, whistle. So, these five little boys went by the names of *who*, *which*, *what*, *while*, and *whistle*.



Won't,
Don't,
Isn't,
Can't.

Crumb,
Front,
Stump,
Tease,
Eight,
Chirp,
Touch.



The closed forefinger always indicates the apostrophe.

Words of five letters show a superfluous letter, if the last does not rest on the chin.

WINDOW.—An old lady went down town one bright, sunny day, and bought six panes of glass for her lame husband, who was a carpenter. He was going to build a large house, and said that he would put but one window in it, for he did not wish his neighbors to be watching him. Just think, only one window in a large house! His wife said she had only bought six panes. “Well,” said he, “that will do; I can build a window with six panes,” and he did. Just see, *w i n d o w*—do n't that make a window?

WHATEVER we would have our children to *know*, we must see that the teachers know *thoroughly*. Whatever we would have the children *do*, that must the teacher be able to do *well*.—*David Stow*.

It is no great thing to be humble when you are brought low; but to be humble when you are praised is a great and rare attainment.—*St. Bernard*.

BABY'S FIRST YEAR AT SCHOOL.

As Told in Confidence to

C. M. DRAKE.

THE first thing I did was to sneeze. The next thing I did was to cry. I couldn't help it. Lots of children cry in school, but my teacher, a motherly old lady, knew how to deal with me, for she took me in her arms and said I was a fine, strong fellow, with good healthy lungs. If I had been a girl, she would doubtless have praised my beauty, but boys would always rather be called strong and manly than pretty. She said I looked like my papa, just as though that was uncommon; and that certain other features were just like my mother's, which was not at all strange. I took several good long breaths, though the air wasn't very pure, a common fault in school-rooms. I was washed clean. Many children go to school without washing, but not when their teachers are as wise as mine. I was washed in warm water, too. Washing in cold water in January is all humbug. I'd like to duck those hydrofools in ice-water who send boys to cold water on cold mornings, and tell them it hardens boys to shiver while they are washing. My teacher didn't brush my hair nor clean my teeth, which, no doubt, was an oversight. All pupils should have their hair combed and teeth clean. Nor did she cut my finger-nails for fear I should grow up a thief, which is as judicious moral training as most boys get. To see whether school would agree with me, I was weighed and pronounced "The finest boy of the season, ma'am, eight pounds and three-quarters!" As I was the first boy of the season, it was not strange I should be the finest. My skin rapidly turned from white to a healthy red under the invigorating influence of light and air; two things which pupils need in abundance. The windows were not arranged quite right—few windows are—and the light made me blink. Did I tell you my eyes were blue? Most all very young pupils have blue eyes at first. Now they are gray. Queer eyes they were, too. Each one moved independently; one would go one way and the other another way. They didn't seem to have learned to move together; in fact, I did not know how to move them at all. Many a pair of older eyes have been scolded for rambling around the school-room, but mine were not. Why, it took me two months before I could blink them when the light hurt my eyes, though I could follow a lighted lamp with my eyes nearly a month before. My skin was not sensitive to pain at first, so I shouldn't have minded a whipping much. Nurse stuck a pin into me, (she didn't mean to do it) but I never cried.

I was taught to speak entirely by the phonic method, using words and sentences from the start. I don't believe I consciously heard a thing the first day of school, but I can remember the first sound I liked was that of the letter s. If I got cross, nurse would say "s-s-s-s-s," and it had just as good an effect on me as a teacher's, "James, if you don't want a whipping, you better keep more quiet." All I said the first week was "a-h," but still I was not scolded. Boys are always encouraged to talk until they go to the town school; there we must

abuse nature by keeping unnaturally still. Still, I learned to cry after several different fashions, and my teachers studied my wants so thoroughly that they soon learned to rightly interpret my wishes. If our after teachers spent more time in studying boy-nature, I think it would be much better for us. Much care was also taken that I should not be too hot or too cold. In after years, when forty of us are crowded together in a cold room, I suppose I shall be scolded and kept in at recess when I try to warm my cold feet by rubbing them on the floor. Papa used to hold me, but he soon grew tired of that, and I was glad of it. His breath used to smell awfully bad on account of cigars and an occasional sip of liquor. I never did like teachers who put such stuff in their mouths. From three months old they kept trying to make me sit up straight, and I expect to be dinned at ever after by all my teachers whenever I try to rest my body by a change of position. And they will never give me in later years half so good a seat as during my first year at school. What did I study? Well, I studied physiology when I was eight or nine months old. Got acquainted with my toes and fingers by object-lessons, not by lessons from books. That folly comes later in life. I learned where my mouth was, too, and used to experiment on different objects by seeing how they would taste. How else could I learn the chemistry of things. Natural sciences were my earliest studies, and when at five years old I shall be forced to drop them for eight or ten years and study the way the others do, you can easily guess what a dull place school will become for me. I could tell quite a number of words and their meaning when I began to walk, which was about last December, I believe. I was just eleven months old, I know. I never did creep much, but I tried to walk from the first. Got somewhat bow-legged by starting so soon, too. Many an older boy gets hurt by learning things before he gets strong enough for them. If I had been a South Sea Islander, I suppose I should have learned to swim, too, but our physical training is woefully neglected. In some ways I was even abused. I used to get so thirsty and cry for water, but they didn't seem to know babies should have water at frequent intervals as well as older boys. They used to strap clothes around me too tight, so that I couldn't fill my lungs well. Papa wears suspenders, but babies don't need such things he thinks. Then they used to feed me at irregular intervals, which was bad for my temper. Older boys get punished frequently, I hear, for eating when they are hungry, but I had to eat whenever I cried for a change of position or anything else. Then every girl that came near me had to pull me about and kiss me. Boys don't like to be kissed—when they are so young. When they are older they can stand more. Then they most ruined my temper by giving way to me when I cried for things. I soon learned to cry for what I wanted until I got it. Papa used to say, "We will whip that out of him when he gets older," but he won't. People don't know that a child's disposition is generally made during the first two years, or they would be more careful with babies. Mother thought there never was such a baby as I, but I guess there are plenty others as good. They used to feed me nasty things when I got older—things with salt, and pepper, and mustard, and lots of other bad things. They would give me sups of tea and coffee—all rank poison for babies, big or little. I expect I shall learn to like them by and by;

and even that horrid pork may taste well when I stupefy my natural desires long enough. But when older people don't know what is good for them, how should babies know? I must stop. There comes mamma, and, though she has no doubt I know a great deal more than I have told you, I don't talk much when she is near. Give my sympathies to any babies you see after this, who are taking their first year of public school in this rough world of ours. I am going to cry, so she will take me. You don't know how to hold babies. Old bachelor school-teachers never do. "A—h!"

MEMORY.

I.—WHAT IT IS—HOW IT ACTS—ITS USE, ITS AIDS, ITS CULTURE,
AND ITS WORTH.

BY E. KNOWLTON.

ANY one of these subheads suggests more than enough for a long article. I propose merely to group a few thoughts and hints upon each, and submit them to teachers and parents who really think, in the hope that each may glean some helpful hints upon this too-much-neglected theme.

The expression, "the whirligig of time," may not be elegant, but it certainly suggests a truth we need to ponder.

Our educational system has too much of the whirligig about it. We mount too many hobbies, ride them furiously till our spasm spends itself, then dump them into the nearest ditch and hunt another. A few years ago our hobby was the object-lesson, then no text-book, then *all* text-book. Just now the coming hobby appears to be the kindergarten, a hobby of far-better breed than any of the others; in fact, it contains so many strains of the best blood of many of its short-lived predecessors, that we may believe it destined to become something more permanent than the six-months go-as-you-please scrub-race in which too many of them briefly figured and speedily perished.

At varying intervals since the time of John Locke, our leading topic, Memory, has been backed by scores of half-professional jockeys, whose spasmodic enthusiasm has generally borne a direct ratio to their professional ignorance.

To-day, it is fashionable to decry an exact or verbal memory. "We don't want to make *parrots* of our pupils! We must teach them to *think*. That's the way to give them true development. That's the chief object of education." And so the staunch old steed Memory lies panting in the wayside ditch, struggling to regain his feet, and neighing for a jockey who dares to mount and speed him another heat among the high-stepping hobbies now jostling each other along the crowded educational track. And, though conscious of little skill in the racing-saddle, I propose to govern and back him till a better rider comes to take my place.

We have two kinds of memory—active and passive. Active memory is the mind's power to bring back, or to bring out, at will, any former mental act, or state, or the result of such act or state. This definition is longer than I like, but the thing to be defined is far too broad and great to be shut within any single or simple term or phrase.

If anybody would feel happier to have the definition put into these words—Memory is our mental capacity to reproduce, to recollect, to remember, any previous perception, conception, reflection, volition, thought or feeling"—he may have his choice even before he pays his coin.

Let me illustrate: Thirty-five years ago I saw President Polk. That was an outward or sensible perception. At this moment, my mind's eye, that is, my memory, can see him so clearly that, were I artist enough, I could draw his likeness so life-like, that any one who knew him would readily recognize it. That is *active* memory. On the seat at his side sat a member of his cabinet. His looks and his name I knew at the time, but do not know them now, or, at least, do not know them as I knew them at the time, or as I know those of the President now.

If any one should show me his picture, or speak his name, ask "Is that the picture or the name of the man who sat in the barouche with President Polk," I could instantly say, "*Pes.*" That name and that likeness are yet in my mind, in some way or in some part, but in such a way or in such a part that my mind cannot get its eye, or its ear, as the case may be, upon it without help. Let me *hear* the name or *see* the picture, and I instantly know it again. I recognize it. Until I do hear or see it I cannot recollect or remember it; for all practical purposes or use I do not *know* it. That is *passive* memory—by far the more common to young and old.

Every teacher of any considerable experience knows how frequently pupils answer, "I know, but I can't speak it." The fact is, they *don't* know. No one, young or old, *can* know a thing, intellectually know a thing, which he cannot speak. He may have sensations which he cannot describe, feelings which he cannot speak, but he can have no perception or conception in his *mind* which he cannot let out through his mouth. We think in *words*, and no mind can think a word which its mouth cannot speak or its hand cannot write, whenever its will may choose.

What the pupil really means when he says "I know, but I cannot speak it," providing he neither lies nor deceives himself, is this: "I *did* know, but have forgotten. That is, I have lost it out of my mind. In fact, the little word *for* prefixed to a verb, often means *not*. Hence, I have *forgotten*, means "I have *not* gotten it now; I *had* it, but it is *gone*; I have *lost* it."

Many a merchant, or, in San Francisco, many a stock-broker, has come to grief because his book-keeper, clerk, secretary, or treasurer proved incapable or dishonest. Memory is the mind's book-keeper, store-keeper, treasurer. It has charge of the mental treasury; the safe-deposit of the mind. In fact, it is both treasury and treasurer. When *it* fails, the mind fails. The reasoning faculty cannot exercise itself because it can obtain from its bankrupt store-keeper no material in which or with which to work.

To return to our pupil who *knew* it but couldn't *say* it. If he does not lie, consciously or unconsciously, he affords the most frequent illustration of the passive memory. The famous "drawing-out process," so admirably shown up in Page's "Theory and Practice," by giving the backward pupil a clue, a hint or a start, so often and deservedly ridiculed, is the thoughtless teacher's too often unconscious help of the dull pupil's passive memory.

Such a pupil's knowledge, his facts, if he ever really had any, are like the money of the merchant who has locked his funds securely in his safe, and lost or mislaid his key, or forgotten the combination of his lock. They are his, yet *not* his. He owns them, but cannot use them. For all practical purposes, for the time being, he is bankrupt; he is a poor man. He might as well have *no* money, as to have no present use of the funds he once owned, and *may* possess again when he finds his key or remembers his combination.

Evidently the passive memory is of so little account for daily use, or instant service, as to barely deserve the name of the memory at all. We will not stay to illustrate or discuss it farther, but, rather, go on to consider its relation to the active memory, and how it can be developed or changed into the active memory—the only reliable, ever-ready and really serviceable faculty—indeed, the kind of memory that we always mean when we say of any person "He has an excellent memory."

A LESSON ON BEETLES.*

BY IRENE HARDY.

[Oakland High School.]

Teacher.—Several days ago, I gave you, in a lesson, some account of the burying beetles. What did you learn then, Tom?

Tom.—I learned where to find them, about their colors, their food, and some of their habits; I know how they look, for you showed us one.

Teacher.—Describe the one you saw.

Tom.—It is black, except the orange-red knobs on the antennæ, and is about three-fourths of an inch long; its wing-cases are striated and look as if they were cut off at the end; they do not cover the whole body. Its eyes are large and stand out from the head, and its prothorax looks like a shield.

Teacher.—That will do, Tom; what else, any one?

Robert.—Its third pair of legs is largest, and it flies well. Its wing-cases are not striated.

Teacher.—How do you know?

Robert.—I caught one after school, and yesterday in the work-hour I made a drawing of it.

Teacher.—What else, John?

* This lesson, in substance, was given to a class of boys and girls who have been studying insects since January 3rd, of this year.

John.—You told us the name of the most common burying-beetle found in Oakland; it is *Necrophorus nigrita*.

Teacher (showing a large black beetle)—Is this it?

John.—Yes.

The class objects decidedly, and John is set right, both as to the name and as to the *habit of learning names* before things, or rather *than things*. Other points of the lesson are brought up, questions asked, and some facts about the insect, observed by other members of the class since the lesson was given, are talked over.

Mary.—I do not know whether the wing-cases are smooth or not; one says they are, and another that they are striated.

Teacher.—Here is the beetle; take it and see; then hand it to Tom, who may show it to the other boy who made a mistake about it. You may write upon the board, Mary, what you find to be true.

For to-day's lesson, I will tell you something about that interesting, though very mischievous family of beetles, known by the common name of Weevils, or Snout Beetles; otherwise they are called *Curculionidae* or *Rhyncophora*.

Most of these beetles you will readily recognize by the snout-like form of the front part of the head: the snout is, in some, long and slender, in others, broad and blunt; in others still, it is curved; the mouth is at the end of the snout, and is furnished with horny jaws; the antennæ are generally elbowed; the outside of these insects is very hard; they pretend to be dead when they are disturbed. Many of them feed on nuts, or other seeds. You have probably found their fat, white grubs in nuts, or you have seen the holes in acorns from which they have crept, when they were ready to change to the chrysalis form.

Some of the *Rhyncophora* are brilliantly colored, but none of those found about here are so. Small, red-brown ones are to be found in granaries, and occasionally in baker's bread. Throw a handful of full-grown, shelled sugar-peas into a bottle, some day when you are shelling them for dinner; in a few weeks, you will probably have as many pea-weevils as your handful contained peas. Here are several weevils which I will send round the class for you to see; look especially at the head and antennæ. They are all found about Oakland and the hills north. This with red wing-cases and black legs is the Rose Weevil; you can find it on wild roses about Berkeley, or in gardens in north-east and east Oakland, in June. Break open the buds of the bushes on which you observe it, and you will see inside white semi-transparent eggs. Pick off and destroy bugs and beetles, unless you do not care for roses. These black ones are found on various wild grasses, eating the seeds; the grey, dust-colored ones, I found crawling on the school-house sidewalk, last spring. The little brown one with a blunt snout and white markings is the pea-weevil, *Bruchus pisi*. The green one is South American. Please handle them carefully.

I will write upon the board the names of the parts of plants destroyed by weevils; also, a list of plants upon which they feed; copy them and add the names of such plants as you find eaten by weevils in your field-work for March. As this (February 25th) is the last day of the school month, I will take the remainder of the lesson-hour for hearing reports on the field-work for February.

Clarke, you may read yours. As we shall not have time for all of your reports to-day; each of you may begin at that part which most interested you; the remainder we will have at another time.*

Clarke.—“February 22nd. To-day, I captured a number of the species *Silpha lapponica*, and, on taking them from the alcohol when I arrived home, I found that their wing-cases were turned inside out. I suppose they take this position in flying.

“February 23rd. The *Staphylinidæ* have, however, seemed to me, on the whole, to be one of the most curious families. Instead of having the antennæ join the head above the eyes and below the mandibles, they project, in one large species which could be examined with ease, from between the mandibles. I can assign no reason for this, unless the antennæ are the seat of smell, and that in this beetle, which feeds on carrion, the sense is highly developed, being so closely related to the mouth. I have also observed that the *profemurs* in this beetle are parallel, and that the *tibiæ* leave them at right angles. The beetle is about an inch long, and is marked with alternate silver-grey and black rings around the abdomen and wing-cases, the thorax and head being black; and to the latter are attached long, powerful mandibles which I discovered, somewhat to my discomfort, in the first two or three I captured—”

Teacher.—That will do, Clarke. You may read from your report, Philip.

Philip.—“February 5th. I went out to a small creek at the head of East Broadway to get water-beetles. I was provided with a net, and with this I procured two *Dytiscidæ*, two *Hydrophilidæ*, and a good many *Gyrinidæ*. On my way homeward, I turned over a tin can and found *Chrysomelidæ* of a yellow color marked with black stripes.

“February 12th. I examined all the trees in my neighborhood. Under the oak-trees I found a good many oak-balls. I noticed that they all had a hole bored in them, and on opening them saw that there was no larva in them. I then climbed the tree and obtained some. I opened these and found a small white grub in them. Afterward I opened some small knobs on a willow-tree, and found a white grub similar to the one in the gall-nut.”

Teacher.—That is very well, Philip. You must not say “a *Chrysomelidæ*,” and “a *Dytiscidæ*,” but “a beetle of the family *Chrysomelidæ*,” etc. Think why. You may read, Ray.

Ray.—“February 22nd. With a net I caught small beetles of the family *Staphylinidæ* flying through the air, and watched the process of folding the wings. The wings were first laid straight along the back, then the insect, by bending the abdominal segments up over the head, tucked the wings securely away under the wing-cases. The same day, among many others, I found beetles of the family *Histeridæ*. One species is about a quarter of an inch long. The head is deeply sunk in the thorax and is provided with stout mandibles. The color of these insects is black, with the exception of the wing-cases, which are bright red. The legs are flattened something like those of a bee, and

* These extracts from the field-work reports are taken, verbatim, without corrections, from papers read yesterday morning. Not quite one-third of the class have read their papers, and I have not seen the others.

the antennæ are short. Most of the insects I have described are vegetarians."

Teacher.—Very good; that will do. Now we will hear from you, Lillian.

Lillian.—February 8th. In the dry sand, under some scattered pine-needles, I found an insect which would have liked to run away from me. He was small and shiny-black, with a red prothorax and head, which looked almost transparent under the microscope. It had prominent eyes, bead-like antennæ, and long, slender, light-yellowish legs. This beetle has a flaxseed-shaped trochanter, largely developed. The mandibles are sharp and not crossed. In a can where some flour had been standing for a long time, I found four live weevils, two grubs, and a number of chrysalids. One day when I was writing, something hopped on my paper, and I found it was one of the weevils which had come out of the chrysalid form. I had left the cover off the box and he flew out."

Teacher.—That will do. We will finish these reports on Monday, and talk over some of the things we have heard to-day. The field-work for March will be a continuation of what you have been doing. Verify as far as possible what has been told you in to-day's lesson and the previous lessons of the last fortnight. Keep a daily account of what you see, as before.

I have here written a poor account of a lesson. Much of the most interesting features are left out, because it is not possible to bring in the questions, the insects, the drawings, and other illustrations. An interesting and enthusiastic class, and all they say, look, and think in any lesson-hour can only be appreciated when seen and heard.

EDITORIAL DEPARTMENT.

WANTED — A SCHOOL FOR NEWSPAPER WRITERS.

THERE are normal schools for the training of teachers; law schools, medical colleges, and industrial schools, to prepare lawyers and doctors and skilled artisans for their several pursuits in life. The education of children seems well provided for, in theory at least. But a growing want appears to be a carefully devised system for the instruction of newspaper men in the elements of common sense.

Here is a wide field—an unbounded prospect. The experimenter's plow has raised no furrow on its unexplored surface. Here the schoolmaster, verily, is not abroad.

Some quacks, it is true—self-appointed physicians, powerful because they own the type to put their crude speculations (misnamed ideas) into print—are ready enough to instruct, to lead the masses. A man who has not been inside the walls of a school-room for thirty years, who has never read five pages of an educational report, whose conception of a course of study is about as clear as would be

a Hottentot's of a French *menu*—this man, styled by courtesy an editor, does not hesitate, at a moment's notice, to dash off a "slashing article" on education. He is ready, nay, anxious, to instruct on the most momentous question affecting human interests, though, perforce, from the nature of his work, he can investigate no subject, examine no authorities, but must draw all his judgments from his own inner consciousness. Some one then may show him clearly in the wrong; but professional pride, usage, and the ordinary obstinacy of the creature, combine to make him of the same opinion still.

In population, San Francisco ranks ninth among the cities of the Union; in wealth it is the fourth or third. It started years ago with a fair system of common schools. By the industry and ability of men like John Swett, these schools were fostered, until in excellence they vied with the best in the world. Now up spring our newspaper writers: other topics failing, reform in schools is expatiated on.

To this model social economist thirty dollars per year seems an enormous price to pay for the education of one child. The aggregate of nearly one million dollars for the training of thirty thousand pupils is colossal extravagance. Twice that amount spent in tobacco, five times as much squandered on whisky, does not attract his attention or arouse his indignation. It is perfectly natural to him, just and right and proper, that the community should expend ten millions in smoke and hiccoughs to one million in education. It reminds us of the story told of Kentucky corn: to keep what is left from rotting, they make bread of it.

We fear there is not much use in arguing educational questions with the average newspaper writer. To conduct an argument satisfactorily, the parties' thereto must stand somewhere on the same plane. One, as well as the other, must have some knowledge of the subject under consideration. To discuss the beauties of literature with an unlettered man, to display the wonders of science before the ignoramus, is, indeed, casting your pearls before swine.

We can see but one course: Let us establish schools wherein newspaper writers, editors, and that ilk, may learn the elements of political economy, of common sense. When they have graduated from these institutions, they will then be prepared to understand a great question like that of universal education. But, presto, change! When they are educated, argument will no longer be necessary. They will see this question as the wisest statesmen, the deepest scholars have seen it in all lands for three hundred years past. They will see that in education, as in all other mundane institutions, *what is worth having is worth paying for*; that one dollar cannot be bought for fifty cents.

Educators and friends of the public schools may as well accept the gage of battle so freely thrown down from every direction.

When we are told that too much money is expended on the public schools, let us retort that the difficulty is, there is not enough. When newspaper men say that the results are inadequate when compared to the expenditures, we can show that the outcome would be more satisfactory were the investment sufficient.

We know an editor noted for the ferocity of his assaults on the public schools, who confesses he does not mean all he says. He is virulent, because "otherwise no impression at all would be made" in his editorials. Another says he is an example of public-school training. We tell him if more money had been spent on his education—if the usual mistake of compressing a tenth-power education into a second-power brain with an inadequate forcing apparatus, had n't been attempted—he would n't now blame the engine which had thwarted Nature in her kind intent to make an honest workman of him.

Our newspapers claim that thirty dollars per year is a large expenditure per

pupil; we claim it is too little. No parent ever *educated* his own children at any such rate—not even in Germany, or Italy, or France, where the purchasing power of money is five times as great as it is with us.

Educated men and women have themselves chiefly to blame for the volume and strength of the attack on the schools. They are too confident of the high utility of their occupation, of the merit of their work, of the good sense of the community, of the affection of the people for the system, to turn about and confute their assailants. Of course, they are very wrong. Their diffidence and indifference are mistaken for cowardice and guilt. Our newspaper man tells his story of extravagance, inefficiency, cramming, etc., so often that he really begins to have the most implicit faith in it himself. He knows it to be true, for has n't he said it himself, in print, uncontradicted, a hundred times?

So we say again, let some philanthropist, some kind, far-seeing man endow a school—a primary school will do—for the education of those who make a profession of writing for the daily and weekly press.

SWETT'S "METHODS OF TEACHING."

WE call attention to an advertisement in this issue of Swett's "Methods of Teaching." The good opinion that we expressed of it a few months ago has been confirmed by the unanimous voice of the press. If any further evidence of the merits of the book is desired, it may be found in the fact that within six months from the time of its announcement it has passed to a fourth edition—an exceptional success for a book for teachers. It has been bought and supplied to teachers by the boards of education in several large cities in New England, such as Manchester, New Hampshire, and Fall River, Taunton, and other cities in Massachusetts.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

No new edition of the School Law will be issued this year, on account of the great expense involved; instead, the amendments made by the Legislature at its last session have been printed on one side of a large sheet, in the same type as that used in the bound copies of the law issued last year, so that they can be cut out and pasted in the book over the sections and the subdivisions of sections which they amend. The eight new sections, which were added to the law, are printed on pages corresponding in size and form with those of the School Law, and can be pasted in the book in the proper place.

These sheets and pages will be sent from this office on application, or they can be obtained from county and city superintendents.

Inquiries have been made as to whether all the amendments are to take effect this year, notably that to section 1621. Section 27 of the act embodying these amendments reads as follows: "This act shall take effect immediately." It was approved March 4th, 1881, and has been therefore in full force and effect since that date.

So far as section 1621 is concerned, it has been held by the Superintendent, that it meant, and was intended to say, just exactly what it now more clearly and specifically expresses. There was a chance before for it to be misunderstood or misinterpreted; that chance, it is thought, is now removed. If the State and county furnish a district with sufficient money to maintain a school eight months in the year, the trustees should not be permitted to close the school at the end of six months, and use the money so saved for any of those purposes for which the district itself should provide the funds. That is all that section 1621, as amended, provides, and that is what it was always intended to mean.

Changes in the form of blanks for teachers' reports and census marshals' reports have caused some delay in issuing them. The printer is pushing our work as fast as possible, and all will be sent out as soon as they can be obtained. When it is absolutely necessary, on account of school closing, etc., superintendents may use the old form of teachers' reports, otherwise it is desirable that the new forms should be used. It should be added, that in the revision of the blank forms used, the superintendent has availed himself of the suggestions and recommendations of the committee appointed by the State Convention of County Superintendents, of which Superintendent Gilson of Alameda County was chairman.

NOTE CAREFULLY the change in the time for electing trustees; the change in the time for appointing census marshals; the change in the time for taking the census, and reporting the results thereof.

Letters are still coming to this office, inquiring if "cities" and "counties," as used in section 1775, includes cities and counties of States other than California. The answer is plainly, no. Section 1565, read in connection with section 1775, will remove any doubt as to the intent and meaning of the latter so far as these terms are concerned.

The State Board of Education will meet at Sacramento Saturday, April 23rd.

Absence from home for two weeks on official business connected with the University, the Normal School, and the selection of a site for the Branch Normal School at Los Angeles, makes necessary another apology to those whose letters have accumulated to such an alarming extent. Each shall receive attention so soon as it can be reached.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. McCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN APRIL.—*Mercury* during the month of April is a morning star, but he is so near the sun that he is not in a position for observation by the unaided eye. He is at his greatest distance from the sun on the 6th, at his greatest western elongation on the 7th, and near the moon on the 26th at about midnight. *Venus* is an evening star, setting on the 11th at 9 h. 56 m. P. M., on the 21st at 9 h. 0 m. P. M., and on the last day at 7 h. 40 m. P. M. She is stationary among the stars on the 11th, and near the moon on the 28th. *Mars* is a morning star, rising on the 11th at 4 h. 31 m. A. M., on the 21st at 4 h. 0 m. A. M., and on the last day 3 h. 44 m. A. M. He is near the moon on the 24th. *Jupiter* is an evening star until the 21st, when the planet and sun set nearly together; after this date until November 14th, the planet sets in daylight. He and Saturn are both near the sun on the 22nd, and near the moon on the 28th. *Saturn* is also an evening star for the first 20 days of this month. From the 20th to November 2nd, he sets in daylight.

At a meeting of the Maryland Academy of Sciences recently, Dr. Theobald showed a species of beetle, and gave the following figures: Weight of beetle, two grains; weight moved by it $5\frac{1}{2}$ ounces, or 2,640 grains, equal to 1,320 times the weight of the beetle. A man weighing 150 pounds, endowed with the strength of this insect, should therefore, be able to move 198,000 pounds or nearly 100 tons.

A NEW mineral has been discovered which, in composition, appears to be an iron—alumina mica. It has been named Siderophyllite, in allusion to the large percentage of iron it contains. It was found near Pike's Peak, in Colorado.

EDWIN CLARK, writing to *Nature*, gives the following method for determining the height of passing clouds. First, ascertain the velocity of the cloud by observing the velocity of its shadow on level ground. At the same time obtain its angular motion per second, by means of a micrometer, telescope, or theodolite. The above data having been obtained, the following formula is used, in which v represents velocity in feet per second, and n the number of minutes of an arc described in t seconds.

$$\text{Height} = \frac{v t 3,438}{n}$$

THE simplest post-office in the world is in Magellan Straits. It consists of a small cask chained to a rock of the extreme cape in the straits, opposite Terra del Fuego. Each passing ship sends a boat to open the cask and take letters out and place others in. The post-office is self-acting, and is under the protection of the navies of all nations, and, up to the present, there is not one case to report in which any abuse of the privileges it affords has taken place.

M. BONNAUD, the successor of the celebrated photographic firm of Numa Blanc, in Paris, has invented a mode of reproducing photographs in colors on baked china at a hundredth part of the cost of the old *faïences*. By it common dinner-plate can be converted into veritable work of art, which, under the old system, would cost at least \$50, and can be produced at a twentieth of that sum, and even then at an enormous profit. The coloring and tints are finer and purer and more clearly defined than anything on hand-painted china, and a revolution in the prices of such *bric-a-brac* is at hand.

AFTER many years of almost fruitless efforts in Arctic research and the expenditure of immense sums of money, to say nothing of the numerous losses of life incurred, those en-

gaged in the work are at last taking measures in the right direction, in adopting Captain Howgate's plan of establishing stations in all future enterprises of that character. A systematic arrangement has been effected, and preparations are being made by nearly all the countries of Europe, and by America, for a regular Arctic siege, to begin in 1882. Germany, Austria, Norway, Sweden, Russia, Denmark, the United States, and Canada, are all to take part in this great work, by establishing observing stations at suitable points all around the Polar area.

A NEW INSTRUMENT FOR SEA SOUNDING.—Mr. Lucas, engineer to the Telegraph Construction and Maintenance Company, London, has invented an instrument for sea sounding which he styles a "nipper-lead." The old plan of ascertaining the nature of the sea bottom, by bringing up a specimen of it in a tube, let into the bottom of the sinker and armed with tallow, is open to several objections; for instance, the specimen is apt to get washed out in rising to the surface, and when it is brought safely on board it is usually so smeared with tallow as to be objectionable. The nipper-lead of Mr. Lucas, on the other hand, retains what it catches and renders it up in a pure state well fitted for preservation. The bottom of the lead or sinker in question is provided with two hollow claws or spoons, not unlike the mandibles of a crab. These are hinged to the sinker, and open out against the resistance of a stout spiral spring which is contained in the body of the sinker. When fully opened out, they are kept apart by a locking device, consisting of two crossbars which meet end to end and fit into each other. The points of the open claws, however, in striking upon the bottom, spring this lock, and the claws snap together with great force, nipping up a specimen of the bottom at the same time, and from their hollow shape this specimen is retained. So effective is the nipper-lead, that the claws will nip a sheet of paper off a table, and they have been found to raise a specimen of the bottom from 2,000 fathoms.—*Scientific American*.

A NEW AMERICAN GEM.—At the last meeting of the New York Academy of Sciences Mr. G. F. Kunz read a short paper upon the new mineral "hiddenite," discovered not long ago in North Carolina by Mr. Wm. E. Hidden, mineralogist. The mineral constitutes a new gem of the emerald class, and is known in the trade as lithia-emerald, owing to the presence of lithia as one of its chemical constituents. We have seen some specimens of this gem, and they are indeed most beautiful objects to the eye. The stone has a pure delightful green tint with a liquid brilliancy that is quite distinctive and remarkable. It sells for about the same price as the diamond. Mr. Hidden tells us that the mineral is found in a narrow chimney in the rock, not more than two feet long by two and a half inches wide.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

The usual annual conflict between the Board of Education and the Supervisors has begun. According to law, the Board of Education make their estimates for 1881-2, asking \$821,000. This is \$70,000 less than two or three years ago, but \$71,000 more than last year, when the whole department was

all but ruined by starving the teachers. The Supervisors declare they will vote no more than last year. This is in face of the fact that the number of pupils is increasing, that two new school-houses are imperatively demanded, and that the aggregate expenditure for municipal purposes is not reduced.

We hope that the board will stand right

up and insist on its privileges, and on a strict compliance with the letter of the law.

It is a fact, that to conduct the schools of the city properly and to the best advantage one million dollars per year is not too much. As it is, the department is annually "beat down" twenty or twenty-five per cent. This niggardly policy of doling out as little as possible, of compromising at seventy cents on the dollar, must in time bear its legitimate fruit of mechanical teaching and superficial learning.

The Board of Education, as now constituted, is disposed to deal fairly with teachers and people alike. Supt. Taylor, on this subject, has always taken a broad, well-balanced view. President Van Schaick has invariably opposed any attempt to impair the usefulness of the department by reducing the salaries of teachers.

A lively struggle may be anticipated. The Supervisor *must* make a showing of economy somewhere, even if it is only in the salaries of primary teachers and janitors. So, we await further developments.

The standard for promotions this year has been fixed at 85 per cent.

Supt. John W. Taylor and Pres. L. H. Van Schaick have both been severely ill during the past month, the former with bronchitis and the latter with inflammatory rheumatism. Both are now convalescent.

By the decision of the Superior Court, Mr. Isador Danielwitz was declared entitled to the contested seat in the board of education, lately occupied by Mr. Harvey. Mr. Danielwitz took his place at the meeting held April 2nd.

ALAMEDA COUNTY.

J. T. McDonald, a graduate of Colby University, who was elected principal of the Livermore school, to succeed Kent, is making an excellent record for himself.

All of the schools in the county, with two exceptions, are now in session.

The next semi-annual Teachers' Examination for this county will be held beginning Tuesday, June 9th, and continue through the week.

The County Board of Education are determined to do everything possible to en-

courage pupils to remain in school sufficiently long to complete the course of study.

During the past two months I have spent considerable time in visiting the Oakland and Alameda schools. The schools in both places are doing good work.

Oakland is most fortunate in having so many highly efficient teachers.

The new Board of Education of Oakland are earnest in endeavoring to promote the welfare of the schools, and I feel sure will do nothing to cripple their efficiency, although in favor of strict economy.

The following circular explains itself:

OFFICE OF CO. SUP'T. OF SCHOOLS. }
Oakland, Cal. April 2nd, 1881. }

"To the teachers of Alameda County, concerning awarding diplomas of graduation to pupils:

"In accordance with the provisions of subdivision 7, section 1771 of the School Law, the County Board of Education are now prepared to conduct examinations of pupils who have completed the "county course of study," and who desire diplomas of graduation.

"Teachers who have pupils wishing to become candidates for diplomas, will send a list of the names and ages of such pupils to the secretary of the board, at *least* one month preceding the close of the term, so that a committee of the board may be appointed, and the time of examination be fixed for such schools as report.

"It is strongly recommended that teachers should endeavor to so interest pupils in their studies as to cause them to complete the course of study, and become candidates for diplomas of graduation.

"By order of Alameda Co. Board of Education. J. C. GILSON, Secretary."

LOS ANGELES COUNTY.

The Vernon school district has a library consisting of four hundred volumes, and a list of one hundred and seventy-five additional volumes has been prepared by the principal of the school, J. E. S. Bell, to be added immediately; making the library one of the best in the county.

At a meeting of the Teachers' Association, held at Los Angeles March 4th, a vote

of thanks was tendered the legislators who had labored in behalf of the establishment of a State Normal School in Los Angeles.

Mr. Benj. F. Porter offered, as an inducement for the location of the State Normal School at San Fernando, one thousand acres of land and one thousand sacks of barley for each of the first five years after the school is in operation. Mr. W. H. Workman offered to donate a five or ten-acre lot on Boyle Heights at Los Angeles for a site for the Normal School buildings. E. J. Baldwin offers forty acres at Santa Anita, and A. L. Currier at Spadra offers one hundred and sixty acres. There is also an offer from Los Angeles of eight acres on Adams Street.

The public schools of Los Angeles are second to none in the State. The city has invested about \$100,000 in her public school buildings and grounds; employs twenty-eight teachers; provides about \$1,200 worth of apparatus, and a library of some 1,500 volumes. The high-school building is a handsome structure, occupying a site that commands the town, and is consequently one of the first objects that arrests the eye of the stranger. The high school properly boasts a curriculum presenting three distinct courses of study, scientific, literary and classical, each one of which prepares the student to enter a corresponding course in the State University at Berkeley. About one hundred pupils are enrolled in this department, and this year it will send out twenty graduates.

There are three grammar and six primary schools, with an enrollment of about 1,700. The course of study for these two departments covers a period of eight years. An interesting feature of these schools is the wide-awake enthusiasm so generally manifested by the children. Little cabinets of minerals, insects, shells and curiosities in general, usually collected by the pupils, are found in many school-rooms, and their presence indicates that the faculty of observation is carefully cultivated. The fact that twenty out of the twenty-eight teachers are possessors of first-grade certificates speaks volumes for the discrimination exhibited by the Board of Education in their se-

lection of teachers. A special teacher gives instruction in drawing, and superintends that work in all grades. The teachers deserve especial commendation. They are an earnest, intelligent, progressive body of men and women, whose hearts are in their work. This is the general verdict of all who visit the schools, and those who are about to come to this city can do no better than to investigate thoroughly the schools near their present homes, and, upon arrival in Los Angeles, to do the same by ours. One who is competent to judge says they cannot fail to be impressed by the excellence of this one of our public institutions.

The city superintendent is Mrs. C. B. Jones, formerly a teacher in the high school. Mrs. Jones has performed the duties of her office in a highly acceptable manner. The president of the Board of Education is Dr. J. P. Widney. This gentleman is deeply interested in the welfare of the schools, and much of their success in Los Angeles may be attributed to his efforts. Mr. William Lacy, the secretary of the board, is also an active friend of the system.

SANTA CRUZ COUNTY.

We regret to note this month, the retirement of Prof. W. W. Anderson from the principalship of the Santa Cruz High School. Prof. Anderson has lately found himself so much hampered in his work by a class in the community, opposed, evidently, not only to high schools, but to all education, that with characteristic spirit he has resigned, and organized a private academy, which, we understand is well attended and flourishing.

Under Prof. Anderson, the Santa Cruz High School deserved its name. In fact, to him mainly is due the establishment of a real high school in that city.

The petty annoyances and obstacles which caused his resignation will react upon the community; and it will be many years before the school organization can again be so harmonious and uniform as when conducted by him.

There are several places in California which, we doubt not, will be glad to secure Prof. Anderson's services. Berkeley proposes to establish a high school; he would be a valuable acquisition there. So it is not

so much the teacher, as the interests of education that will again suffer.

SAN MATEO COUNTY.

The Pigeon Point school opens shortly with Mr. W. G. Thompson as teacher.

Redwood City wants a mechanical school for boys.

Moses Hopkins, Esq., the recent purchaser of "Redwood Farm," has given \$50,000 for the endowment of the Golden Gate Academy at Oakland.

At the earnest solicitation of friends, Mr. Samuel Walker has consented to run for school trustee. He has held the office for two years.

The Tunis school began the present term March 28th. Miss Baker is again the teacher. She teaches the entire year, alternately in Tulare and San Mateo counties.

Mr. Craft, who is to occupy the chair of principal in the Half Moon Bay school, is a professional short-hand reporter, and has edited one or two papers. He has had large experience in teaching, both in this State and in the East. The school opens April 4th.

The Empire new school has closed for want of funds; and it is feared that many other schools in the county must close for the same reason.

The Pescadero public schools opened March 14th, with W. B. Turner principal, assisted by Miss Ada Jacobs in the second grade, and Miss Amelia Stauffer in the primary department. Miss Stauffer taught several years in Purissima and Half Moon Bay district, giving satisfaction to all.

Work will be continued on the school-house until the building is completed. It will be a school building of which the town may be proud.

The new rooms in the public school building will be ready for occupancy this week (April 1st). Miss Stauffer has been conducting the primary department in the private-school building, kindly furnished by Mr. Jarretson. The fourth room in the public school-house was finished by private subscription.

PLACER COUNTY.

Miss Alice Robinson has resigned her place as teacher of the second intermediate department of the public school at Auburn. Miss Robinson has gone to take charge of a school which has been kept for her for some time in the Pleasant Grove district, Sutter County. She proved herself to be a thorough and faithful teacher while in Auburn, and will be sadly missed by the many friends she leaves in that place.

The Auburn schools will be obliged to close soon for want of funds.

School commenced at Iowa Hill March 7th, under the charge of Mr. Drew and Miss Murphy, and after a week's continuance stopped for a fortnight's vacation on account of the illness of Mr. Drew.

A new bell has been placed on the school-house, much to the delight of the scholars.

The public schools of Colfax closed Friday, March 18th. The three school-rooms are to be occupied during the summer by private schools.

The Forest Hill school is in a very flourishing condition.

SACRAMENTO COUNTY.

The last monthly report of City Superintendent Landes shows as follows: Total number of pupils in primaries and ungraded, 1,788; Capitol Grammar School, 331; Sacramento Grammar, 504. Superintendent Landes reported the funds on hand as \$22,125.70. Collected in March for tuition from non-residents \$27.80.

Mr. Whitman H. Hill, who was for six years County Superintendent of Schools, and subsequently clerk of Eldorado County, died at the County Hospital, near Sacramento, March 30th. He was a native of Georgia, aged 48 years.

STANISLAUS COUNTY.

The school at Hill's Ferry, taught by Miss Angie Hambleton the past year, closes April 22nd. Miss Hambleton is a most able teacher, and the school has prospered wonderfully while under her instruction.

TRINITY COUNTY.

The following named teachers have been engaged for the public schools in Trinity County: Weaverville, D. Cummings, A. Wheeler, and Miss Mary O'Neil; Douglas City, C. A. Bills; Hay Fork, Miss M. N. Wadleigh; Cox Bar, H. R. Giveen; Junction City, Rob't Berger.

ELDORADO COUNTY.

The Mt. Ankum school begins with Miss Choat as teacher.

COLUSA COUNTY.

Mrs. Eliza T. Singleton, for three years past a teacher in Colusa, died at that place March 19th.

SUTTER COUNTY.

The Meridian public schools closed March 18th. An exhibition is to be given on March 29th in the school building, to raise that part of the teachers' salaries still unpaid.

SANTA CLARA COUNTY.

A County Teachers' Institute will be held at San José sometime during the month of May.

The first lecture of the Santa Cruz high-school course will be given by Prof. Ira B. More of the State Normal School. The subject will be "Hannibal."

SANTA BARBARA COUNTY.

The patrons of the Santa Rita school have raised a subscription to buy new seats for the school-house.

The teacher of the school, S. N. Burch, has given such general satisfaction to all concerned, that the patrons are anxious that he should be retained in the school the coming year.

FRESNO COUNTY.

The Fresno public schools closed on March 11th, after a term of six months' duration.

KERN COUNTY.

The school at Tejon opened March 28th, with Miss Alice Morrill as teacher.

SAN LOUIS OBISPO COUNTY.

Miss Laura Stivers has the school at San Simeon Bay.

YUBA COUNTY.

At the election in Yuba City, a proposition to levy a special tax was carried by a vote of thirty-three to thirty-two. The public schools will thus be continued three months longer.

SAN JOAQUIN COUNTY.

The Stockton Board of Education has voted to continue music in the public schools. Three votes were in the affirmative and two in the negative.

The school-tax is fixed at 18½ cents. It is stated to be less than that of any other city in the State.

Owing to the crowded condition of the schools, it has been found necessary to build a new school-house.

CONTRA COSTA COUNTY.

Report of the Martinez schools for the month ending March 18th, 1881: Principal's room—number enrolled, 35; percentage of attendance, 96. Miss Wittenmyer's room—number enrolled, 39; percentage of attendance, 96. Miss Porter's room—number enrolled, 50; percentage of attendance, 93.3. Miss Frazer's room—number enrolled, 64; percentage of attendance, 94.5.

A public ball was given March 25th at Martinez for the benefit of the public school fund.

NAPA COUNTY.

Miss Smith, of the Napa primary department of the public schools, has been compelled by ill health to resign her charge, and is succeeded by Mrs. H. L. Stowell of San Francisco.

The new north public-school building was damaged by an incendiary fire on the night of March 26th. An agent of the Oakland Home Insurance Company awarded to Mr. Griffin, the contractor, \$250 to cover the loss.

HUMBOLDT COUNTY.

The Peninsula school opens with Miss M. A. Tyrrill as teacher.

PLACER COUNTY.

The Auburn public schools close April 7th. There will be a vacation of one week, after which Mr. Durham, the principal, will open a private school.

NEWS RECORD.

OUR record extends from FEBRUARY 28th, to MARCH 28th inclusive.

Foreign and Domestic.

James A. Garfield is now President of the United States. Ex-President Hayes has retired to his quiet home at Fremont, Ohio. The grateful good-wishes of the American people should follow him, for it safe to say that more a respectable administration has not been known in the history of this country.

The last official act of the out-going President was his veto of the Funding Bill, a measure which looked to the refunding of the United States five and six per cent. bonds at a rate of only three per cent., a rate unprecedentedly low for this continent. The passage of the bill by Congress created a panic in the New York money market, which might have caused serious consequences to the whole country, had it not been checked by a veto and by remedial action on the part of the Treasury Department.

The new Cabinet is as follows: Secretary of State, James G. Blaine of Maine; Secretary of the Treasury, Wm. Windom of Minnesota; Secretary of the Interior, S. J. Kirkwood of Iowa; Secretary of War, Robert T. Lincoln, of Illinois; Secretary of the Navy, Wm. H. Hunt of Louisiana; Postmaster-General, Thos. L. James of New York; Attorney-General, Wayne McVeagh of Pennsylvania.

Mr. Levi P. Morton of New York has been appointed and confirmed Minister to France in place of Gen. Noyes.

Ex-Senator Tim. O. Howe, Ex-Secretary Wm. M. Evarts, and Ex-Senator A. G. Thurman, have been appointed Commissioners of the United States to an International Monetary Conference at Paris, the purpose of which is to arrange some concert of action between the principal nations in respect to the use of silver as money.

Secretary Sherman's final showing for his administration of the Treasury Department is an interesting document. The diminution of the national debt for the past year is over \$115,000,000; for the whole four years, nearly \$209,000,000. The total debt, less cash in the treasury, March 1st, was \$1,880,000,000.

President Garfield has nominated Stanley Mathews to be Associate Judge of the United States Supreme Court; and Major John W. Powell, the explorer of the Color-

ado basin, to be director of the geological survey, in place of Clarence King.

Queen Caroline of Denmark is dead.

An appalling loss of life followed the earthquakes on the island of Ischia, during the early part of March, more than 300 bodies having been found at one village.

The committee charged with the duty of managing the exploring expedition in search of the Arctic exploring steamer Jeannette purchased a steam whaling-ship now lying in the Bay of San Francisco, said to be admirably adapted to the purpose of a cruise among the ice floes. This purchase will consume \$100,000 of the \$165,000 appropriated by Congress, leaving \$65,000 to equip the vessel and pay other expenses. It is intended to have this steamer all in readiness to sail early next July.

It is reported that the English Government proposes to grant the Boers a constitution similar to the Confederation Act of 1867, under which Upper and Lower Canada, Nova Scotia, and New Brunswick were merged into the Dominion. Each State will be allowed to elect its own legislature, and to return a certain number of members, on the basis of representation by population, to a Federal Parliament, which shall have supreme power, subject only to the Colonial Office, which will revise legislation.

Alexander II, Czar of all the Russias, while returning from a parade, about two o'clock on the afternoon of the 13th of March, in company with his brother, the Grand Duke Michael, was killed by the explosion of a bomb, thrown by an assassin as he was leaving his carriage. The Emperor's legs below the knees were mutilated in a terrible manner.

The Portuguese Chamber of Deputies has adopted the treaty giving England right of way through the territory and territorial waters of Portugal for military and commercial purposes. England thus gains access to her South-African colonies by way of Delagoa Bay.

The Government of Columbia has executed a contract with the Central and South American Cable Company for a cable north and south from the Isthmus of Panama, to connect with the United States and Europe, via Central America and Mexico.

The French Government has ordered that a course of instruction in agriculture be introduced into every primary school in the country.

Educational.

The superintendent of the census makes the following statement of the population of the States and Territories: Alabama 1,262,344, Arizona 40,441, Arkansas 802,64, California 864,686, Colorado 594,469, Connecticut 622,683, Dakota 34,502, Delaware 146,654, District of Columbia 177,638, Florida 266,566, Georgia 1,538,983, Idaho 32,611, Illinois 3,078,636, Indiana 1,978,358, Iowa 1,624,463, Kansas 995,835, Kentucky 1,648,599, Louisiana 940,263, Maine 648,945, Maryland 935,139, Massachusetts 1,783,086, Michigan 1,634,096, Minnesota 780,807, Mississippi 1,131,899, Missouri 2,169,091, Montana 39,157, Nebraska 452,432, Nevada 62,265, New Hampshire 347,784, New Jersey 1,130,892, New Mexico 118,430, New York 5,083,173, North Carolina 1,400,000, Ohio 3,197,794, Oregon 174,767, Pennsylvania 4,282,738, Rhode Island, 276,528, South Carolina 995,706, Tennessee 1,542,463, Texas 1,597,509, Utah 143,907, Vermont 332,286, Virginia 1,512,203, Washington 75,120, West Virginia 618,193, Wisconsin 1,315,386, Wyoming 20,788. Total, 50,152,559.

The following is an approximate statement of the population of the principal cities: New York 1,206,590, Philadelphia 846,984, Brooklyn 566,689, Chicago 503,304, Boston 362,535, St. Louis 350,522, Baltimore 332,190, Cincinnati 255,708, San Francisco 233,956, New Orleans 216,140.

Summary of School Statistics of the United States.—The total school population in the States for 1878 is 14,418,923; number enrolled in public schools, 9,294,316; average daily attendance, 5,093,298; seven States not reporting. The school population of the Territories is 157,260; number enrolled in public schools, 78,879; average daily attendance in the five Territories reporting this item, 38,115.

Teachers and Salaries.—The total number of teachers in the States was 269,132; in the Territories, 2,012, Idaho not reporting. The average salaries of teachers are reported from all the States and Territories except Florida, Georgia, Idaho, and New Mexico. The wages of men vary from \$28.22 a month in South Carolina to \$106 in Nevada; the wages of women, from \$15.92 in Maine to \$84 in Nevada; the average wages of teachers of both sexes is \$17.44 in Alabama and \$71.56 in Wyoming. In Maryland, Mississippi, and Indian Territory the salary of males and females is the same. The greatest difference between the salaries of males and females is in Massachusetts, where the former receive \$75.64; the latter \$33.04.

Income and Expenditure.—The total annual school income reported by all the States and Territories is \$86,978,101; annual expenditure, \$80,529,958, of which \$8,483,650 were expended for buildings, apparatus, etc.; \$1,088,042 for salary of superintendents,

and \$51,853,655 for teachers' salaries. The estimated value of sites, buildings, and all other school property is \$176,812,177; ten States and four Territories not reporting. The expenditure per capita of the school population varied from 76 cents in North Carolina to \$24.78 among the Cherokees; and per capita of average attendance in public schools from \$2.44 in North Carolina to \$62.76 among the Cherokees.

Generalization.—From the statistical summary, generalized without reference to States, it appears that the school population is, for 38 States, 14,418,923; for 9 Territories, 157,260; the number enrolled in public schools is, for 38 States, 9,294,316, for 10 Territories, 78,879; the number in daily attendance is, for 31 States, 5,093,298, for 5 Territories, 38,115; the number of pupils reported in private schools is, for 12 States, 280,492, for 4 Territories, 6,183; the total number of teachers is, for 38 States, 269,132, for 9 Territories, 2,012; the number of male teachers in 34 States is 100,878, in 8 Territories, 789; the number of female teachers in 34 States is 141,780, in 8 Territories, 1,027; the public school income is, for 38 States, \$86,035,264, for 10 Territories, \$942,837; the public school expenditure is, for 38 States, \$79,652,553, for 10 Territories, \$877,405; the permanent school fund for 32 States is, \$106,138,348, for 1 Territory, \$1,506,961.—*Ohio Educational Monthly.*

The new building for the Boston English High School and Latin School is regarded as the largest free public building in the world. It is 339 by 220 feet, with a hollow square in the middle. There are fifty-six rooms in all, including a drill-hall 30 by 60, a gymnasium of the same dimensions, and an exhibition-hall capable of seating twelve hundred and fifty persons.

In a meeting of an association of teachers at Vienna, a paper was read in which six methods of teaching geography were recognized; viz., 1. The analytical, whose point of departure is the earth taken as a whole; 2. The method of association, combining geography, history, natural history, and physics; 3. The method of grouping or reuniting objects of the same nature; 4. The method of concentration which distributes geographical matter in successive and graduated courses; 5. The constructive, which essentially rests upon plastic forms; 6. The synthetic, which takes as the point of departure one's native place or some determinate point. The editor of *L'Edicateur*, of Neuchatel, pronounces in favor of the last method in combination with the first as the most likely to produce successful results.

South Carolina will devote the Peabody fund to the education of teachers.

Texas now gives to each of her counties four leagues of land to be used for the support of county academies or high schools.

The report of State Superintendent Halsey, of Florida, shows that the condition of the common schools in that State is encouraging. The total number of schools reported during the past year—1,131—shows an increase of 244 in the last three years. The aggregate attendance was 39,315. The total amount expended for school purposes was \$114,895.31. There were 675 male and 420 female teachers employed, with average salaries ranging in the different counties from \$72 to \$5 a month.

Virginia has now two summer normal schools—one at the University, and one for colored teachers at Lynchburg. North Carolina supports a six weeks' normal school for white teachers, and a yearly one for colored. Georgia has a normal department in the University of Atlanta, and sends twenty pupils to the Normal College at Nashville. Florida also sends pupils to the Normal College at Nashville. Alabama has one for white pupils, and two for colored. Louisiana has two, Arkansas two, and Texas has just provided by law for two. West Virginia nominally has six, but they are neglected; while in Tennessee is the widely known Normal College, supported chiefly by the Peabody fund.

In Georgia, school attendance has had a remarkable increase. From 49,576 in 1871, it ran up to 226,627 in 1879. Of the latter number, 79,435 were colored children.

The educational progress in Tennessee during the past eight years has been wonderful. In 1872, in some of the counties there was not a single school, either public or private. In 1872, there were 3,942 schools in the State; last year there were 5,522. In 1875, the average daily attendance was 126,805; last year it was 161,461.

The Pennsylvania State Normal School, at Millersville, Penn., has an attendance at the winter and summer sessions of 818 students, and a regular attendance at the present time of 594. Of this latter number 396 are male students, and 198 female. The Model School has an attendance of 64 boys and 38 girls. The institution is provided with a corps of 26 instructors, under the direction of Edward Brooks, A. M., Ph. D., principal; and, the school being under the supervision of the State, those students who at graduation express a determination to teach in the State, receive financial assistance.

Few people are aware of the extent to which the State of New York is a school teacher. The annual report of Superintendent Gilmour shows that the State is now divided into 11,263 school districts; that it maintains 11,899 school-houses, and is educating 1,641,173 children, an increase in attendance of over 12,000 during the past year. The work of instruction is performed

by 30,737 teachers, of whom almost 23,000 are women. The total expenditure of money during the year for the maintenance of these schools was \$10,296,977. The superintendent heartily commends the value of the Teachers' Institutes, and advises that provision be made in the academies for teachers' classes. He makes an excellent suggestion to the effect that the examinations of teachers should be uniform throughout the State, and that the caprice of trustees should have less to do with their removals. The amount expended for teachers' wages was \$7,638,921.88; the average annual salary for each teacher, \$369.56.

Governor Cornell, of New York, in his annual message, said: "The last Legislature enacted a law making women eligible to vote at school meetings, and to serve as school officers. In many localities women have already participated in school meetings, and in numerous instances they have been elected trustees. The measure has greatly increased the interest in school management, and must inure largely to the welfare of the schools."

BELGIUM.—The number of teachers pensioned in 1879 is 37. On the 1st of January, 1880, there were in all 171 pensioners, receiving 321,939 francs a year.

RUSSIA.—The number of students in Russian military schools is 11,300, of whom 8,800 are boarders. The expenditure of these schools exceeds \$4,000,000.

The Russian Minister of Public Instruction has decreed that no university under his jurisdiction shall henceforward admit a student who is married, and that students who get married after matriculation shall be expelled.

The Boston Institution of Technology gives series of lectures to instruct teachers in the use of the limited means usually at their command. Those given by Professor Cross, a man of growing reputation, are so valuable and popular that they have to be given twice on Saturdays.

It is proposed at Victoria to provide by law for religious services in the public schools.

One of the beliefs stated at the recent meeting of the Rhode Island teachers was, that the time has come for deposing arithmetic as the most important study for children, and substituting the study of English language.

Among the new laws of Vermont is one incorporating the Vermont College of Teachers.

The University of Michigan has at present in actual attendance 1,517 students—thus far its largest number.

A striking contrast to Prussia is presented by Spain. Holding the position of a first-class power two centuries ago, fruitful in heroes and poets, and now of even less importance and less distinction than some of her former colonies. At the last general census, in a population of 16,301,851, only 715,916 women and 2,414,015 men were able to read and write. Under the amendments of the school law in 1847 and 1857 requiring teachers to be examined, and providing for building school-houses and founding certain scholastic institutions, the schools improved, so that whereas in 1848 there were only 663,711 pupils enrolled, in 1871 there were 1,046,558 in public and private schools.

In 1878 Spain had 29,038 public and private primary schools, with 1,633,288 pupils of both sexes. Of the 29,038 schools, more than three-fourths are public; 8,580 schools with 830,000 pupils, are gratuitous. The number of popular libraries is 590, with nearly 100,000 volumes. The expenditure for primary education amounts to more than 26,000,000 pesetas (one peseta, twenty cents).

Mrs. V. G. Stone of Malden, Mass., has given to various colleges and academies, including Dartmouth, Bowdoin, Amherst, Andover, Oberlin, etc., nearly one million dollars.

The last general educational report shows that Massachusetts, of all the States, has the highest percentage of population of school age enrolled in the schools, and also the largest average daily attendance. Massachusetts also shows the greatest difference in the salaries given to male and female teachers. The former receive \$75.64, the latter, \$33.04.

The trustees of Cornell University have appropriated \$100,000 for immediate improvements. Fifty thousand dollars are to be spent in building and equipping a physical laboratory. It is proposed to establish departments of mining, engineering, metallurgy, and music.

The *School Bulletin*, on the subject of ventilation, throws out a timely suggestion in the following: "Please don't lower the top sash, unless upon rare occasions upon the leeward side of the school-house; never upon the windward side, and especially never upon both sides at once. That catarrh has become a national disease is perhaps due as much as anything to the habit of sitting under windows down at the top, through which heavy clouds of cold air enter and fall upon the bare head. If you must ventilate through the windows, raise the lower sash three or four inches and put a tight board between it and the sill, so that fresh air will enter between the upper and lower sashes

with an upward motion, and thus get somewhat diffused before it drops."

Personal.

Thomas Carlyle, the distinguished author, died in London, on February 5th. He was born in Dumfriesshire, Scotland, Dec. 14th, 1795, and was therefore in his 86th year at the time of his death. At an early age he entered Edinburg University with a view to the ministry, but before completing his theological course, he embraced literature as his profession. He spent a few years in teaching, and, being fond of mathematics, he translated Legendre's Geometry. This was his first book. During the half century following this, he was a valuable contributor to some of the British reviews, and was also industriously engaged in writing the works which have made him famous as a prince in English literature. His most popular works are his "French Revolution," "History of Frederick the Great," "Life and Letters of Cromwell," "Past and Present," and "Heroes and Hero Worship." He was a great thinker and forcible writer.

The Rev. Dr. J. L. M. Curry, who succeeds the late Dr. Sears as general agent of the Peabody Educational Fund, with a salary of five thousand dollars, is a Southerner by birth, and mainly by education. He was a student of Harvard Law School, and served in the Mexican war. He served four years in the United States Congress, and subsequently was a member of the Confederate Congress, and a lieutenant-colonel of Confederate cavalry.

Professor Elliot, of the Smithsonian Institution, it is said, knows more about Alaska and its seal fisheries than any one else in this country. He passed between three and four years in Alaska, from 1869 to 1872, and often went for months without seeing a white man. He mastered the language of the natives, and made a most complete study of their mode of life.

The Emperor William has but two children, the Crown Prince, who married the eldest daughter of Queen Victoria, and who will be the next Emperor of Germany, and the wife of the Grand Duke of Baden.

Professor Huxley's appointment as Inspector of Salmon Fisheries was made at the express instance of Sir William Harcourt, who desired to promote his interests as well as the interests of science. He is to retain his present professorship, and the new appointment nearly doubles his salary.

Those who know Emanuel Swedenborg only as the author of metaphysical speculations, resulting in a religious system, will

be surprised to learn that, as a mathematician, a metallurgist, and a physician, he ranks among the master-minds of the earth. It is said that among the doctrines of modern science, which are either anticipated or more or less definitely inculcated by his "Principia," are: 1. The atomic theory; 2. The solar origin of the earth and her sister planets; 3. The undulatory theory of light; 4. The nebular hypothesis; 5. That heat is a mode of motion; 6. That magnetism and electricity are closely connected; 7. That electricity is a form of ethereal motion.

For the first time in the history of the Roman church, the Pope has come to America for a prominent official. He has appointed the Rev. Dr. Nemo, of Villanova College, Philadelphia, Most Rev. Father-General of the Order of St. Augustine throughout the world. The headquarters of the order are at Rome, giving him a power corresponding with that of the Father-General of the Jesuits. Dr. Nemo is forty-five, of Roman birth, but came to this country fifteen years ago.

George Eliot was proficient in Hebrew, Greek, and Latin, in German, French, Italian, and Spanish. "One great in Israel" wrote to her, after the publication of "Daniel Deronda," expressing wonder at her acquaintance with Jewish peculiarities and customs. Her face is said to have borne a strong resemblance to the pictures of Savonarola.

Miss Braddon, it is said, is receiving a larger income from her books than any other English novelist.

A daughter of ex-Senator Sargent, of California, having graduated at the Medical College of the Pacific, has been admitted as a member of the medical faculty of San

Francisco. Her mother has long been connected with the movement for female suffrage.

Mark Twain is above the medium height, of good muscular development, with brown hair curling over a high white forehead. He looks much younger than he is. His home is all that wealth and taste can make it, and in it he has a lovely wife and three healthy children.

Mr. Herbert Spencer is about to begin his autobiography.

Mr. W. D. Howells, it is said, has resigned his post as editor of the *Atlantic Monthly*, wishing to devote his time entirely to authorship. He has done much for the magazine during the twelve years of his editing, and his place will not be filled easily. Mr. James T. Fields, a former editor of the same publication, is spoken of as his probable successor.

It is said that Lord Beaconsfield intends to leave an autobiography, to be published under Lord Rowton's supervision. It would be vastly interesting reading if he should.

Mrs. Jerome Bonaparte is a granddaughter of Daniel Webster. She is passing the winter in Washington. She dresses with great magnificence, and with her jewels, her cashmeres, and her *chasseur*, who precedes her everywhere, holding her wraps, and waiting on her personally, makes an appearance worthy the two great names she unites.

Both George Eliot and Thackeray died within two days of Christmas.

Captain Saldanha de Gama, a lineal descendant of the great Captain Vasco de Gama, is now visiting in this country from Brazil.

EXAMINATION QUESTIONS.

QUARTERLY EXAMINATION OF THE SCHOOLS OF SAN FRANCISCO, MARCH, 1881.

GRAMMAR.

First Grade—100 Credits.

1. What is a copulative verb? Name the only *pure* copulative verb and four other verbs which are used as copulatives.

2. Explain the difference in the use of *shall* and *will*.

3. Give the principal parts of the verbs lie, set, come, lay, sit, flee, fly, throw, draw, drink.

4. Write sentences containing—I. A sub-

ject clause. 2. An objective clause. 3. A predicate clause. 4. A relative clause. 5. An adverbial clause.

5. Give a synopsis of the verb *beat* in the indicative, potential, and subjunctive moods, passive voice, using the personal pronoun of the third person plural as the subject.

6. I hear thee *speak* of a better land.
Born to a crown, he died on the scaffold
Dear *remembrances* of happier days are
those faded *flowers*.

How beautiful the *night*!

The sky seems *like a canopy o'er-spangled* with gold.

Remembering the *past*, I forbear to reproach you.

(1) Give case of the nouns, with reasons.

(2) What parts of speech are *born, o'er-spangled, remembering, and like?*

7. (a.) Write sentences containing *that* used as a conjunction, *but* as an adverb, *for* as a conjunction.

(b.) Write sentences containing an adverbial objective and a nominative absolute.

8. Correct the following sentences: 1. We arrived safely. 2. They believed it to be 1. 3. I will sell either of the four. 4. Who are you talking to? 5. Do not take up what you have not lain down. 6. Ye will not come unto me that ye might have life. 7. He is as mistaken as her. 8. I learned him to read. 9. Read slower and more emphatic. 10. He was tardy every day this month.

9. How is the passive voice formed? Write two sentences expressing one idea, with the verb *active* in one and *passive* in the other.

10. Mention the only seven words in the language, in whose use it is possible to make a mistake in regard to case.

Second Grade.—100 Credits.

1. (a) Write the plurals of *money, thief, cargo, phenomenon, radius*.

(b) Give principal parts of *flee, ring, lay, do, teach*.

2. Write sentences illustrating the use of *but* as a conjunction, an adverb, and a preposition.

3. Write a synopsis of *go* in three moods.

4. By what three kinds of words are clauses connected? Illustrate.

5. (a) Name three kinds of clauses, and give examples.

(b) Write a complex sentence about Benjamin Franklin.

6. (a) Write sentences exemplifying two uses of the infinitive mood.

(b) Write sentences containing the present perfect indicative of *lay*, and the past perfect potential of *sit*.

7. Correct the following sentences: He walks slower than me. The tallest of the two boys ran away. Who did you send it to, he or she? Me and him had went to the country. Joseph will come after you and I. The soldiers flew in all directions.

8. *Let us esteem others better than ourselves.*

(1) Give case of the pronouns, with reasons.

(2) Mood and tense of the verbs.

(3) Classify *better* and *than*.

9. How are the passive voice and the progressive form of verbs formed?

10. Write not less than fifteen lines about a trip on the Geary-street cable-road.

Third Grade—100 Credits.

1. Write sentences containing a limiting adjective, a conjunctive adverb, a relative pronoun, a transitive verb, and an intransitive verb.

2. Name three ways in which the *subject* of a sentence, and two in which the *predicate* may be modified.

3. (a) Write the possessive plural of *monarch, chief, and church*. (b) Give the superlative of *little* and *much*.

4. Change the voice of the verb in the following sentences: 1. De Soto discovered the Mississippi. 2. The grain was sown by the farmer. 3. Who loves Lucy? 4. We shall be seen by the enemy. 5. He drank the cool spring water.

5. Correct: Those kind of questions puzzle me. I will leave you go out after a while. This is secret between you and I. This class of goods are scarce. Her and me have went to school together for a year.

6. Change "I learn" to the various tenses of two moods.

7. Give the correct grammatical term for the following: 1. A regular arrangement of the moods, tenses, &c., of a verb. 2. The division of Grammar which treats of the proper arrangement of words in sentences. 3. A verb used to help form tenses of other verbs. 4. A word used only as a *connecting word*. 5. An adverb used to connect clauses.

8. Give examples of an adverbial phrase and an adjective phrase.

9. Write short sentences containing the present perfect indicative of *lie, see, go, come, and begin*.

10. "There are my treasures," said he.

Rally round the flag, boys!

Classify all the words, tell the case of the nouns and the mood and tense of the verbs.

Fourth Grade—100 Credits.

1. Name the different kinds of sentences, and give examples of each.

2. Give three rules for forming the plurals of nouns, and illustrate each.

3. Write four statements about a ship, and combine them into one sentence.

4. Write the following, using all proper abbreviations possible: A clerk in the Central Pacific Railroad office living at number two hundred and one Bryant Street, called upon the superintendent yesterday for the charges upon 20 barrels of pork and 30 hogsheads of sugar that were received overland the tenth of last month.

5. What do you mean by the subject and the predicate of a sentence? What is the difference between a transitive and an intransitive verb?

6. Correct these sentences: I ain't well this morning. Him and me are pardners. I seen him when he run away. Read slower. Leave them books alone

7. (a) Give three rules for the use of participles. (b) Write two sentences using *carpet* as a verb, and *iron* as an adjective.

8. (b) "This man sells that calf." Change all the words in this sentence to the plural. (b) "These kind of people hadn't ought to be so proud." Correct this sentence.

9. Give examples of two different kinds of *phrases*.

10. Write a little account of a trip to the Park.

Fifth Grade—100 Credits.

1. Rule your paper properly, and arrange in the right columns the words in the following sentences:

(1) The first settlers of Plymouth were the Puritans.

(2) The teacher sent for the boy, who was not at home.

(3) Mary and her mother visited their friends last week.

2. Write three simple statements about sugar, and join them into single sentence.

3. Correct the following: They done it quick and run away. Give me the loan of your book. Them marbles is mine. I don't like these sort of lessons. Him and me is good friends.

4. Give the proper abbreviations for—credit, company, postscript, collect on delivery, afternoon.

5. Name three kinds of sentences, and give examples of each.

6. Punctuate properly and insert quotation marks: Emma Alice and Louisa are gentle kind and affectionate You are wrong said I I know it answered he.

7. Mention one use of the apostrophe, and illustrate.

8. Give the plural of half, knife, cheese, thief, ox.

9. Write a composition about "What Boys do on Saturday." 20 credits.

ARITHMETIC.

First Grade—100 Credits.

1. Define the following terms used in arithmetic: Ratio, commission, compound interest, bank discount, and percentage.

2. A merchant sold $88\frac{1}{2}$ tons of coal at \$6.50 per ton, gaining \$175.25; what per cent. profit did he make?

3. At what rate will \$1,600 amount to \$1,750 in 2 years, 6 months, and 17 days?

4. (a) What is the cost of plastering the walls and ceiling of a room 30 ft. long, 20 ft. wide, and 16 ft. high, at 27 cts. a square yard?

(b) Find the distance from the lower corner of the room to an opposite upper corner.

5. (a) How much cash down will pay the following bills: \$345.25, 2 per cent. off for cash; \$237.90, 3 per cent. off, and \$525, $2\frac{1}{2}$ per cent. off.

(b) I deposit \$600 in a bank, allowing 6 per cent. interest, payable semi-annually, and if not drawn, added to the principal. How much will be due me at the end of two years?

6. How many acres in a triangular field, whose sides are 50, 40, and 30 rods?

7. If 4-5 of an acre of land costs \$7,960, what is the cost of 10 acres and 150 square rods?

8. If 34 men, working 10 hours per day, earn \$337 $\frac{1}{2}$ in 18 days, how much will 8 men earn in 20 days, working $8\frac{1}{2}$ hours a day?

9. Find the outside surface of a box, whose dimensions are 4 ft., $2\frac{1}{2}$ ft., and 2 ft.

10. Find the diameter of a circle equal in area to a rectangle 88 inches long and $40\frac{1}{2}$ inches broad.

Second Grade—100 Credits.

1. Express decimally $2\frac{1}{4}$ per cent., $12\frac{1}{2}$ per cent., $\frac{1}{2}$ of 1 per cent., 1-50 per cent. $25\frac{3}{4}$ per cent.

2. If I borrow \$1,250 March 18th, 1872, at $8\frac{1}{2}$ per cent. interest, how much shall I owe Jan. 24th, 1875?

3. A field 40 rods square contains how many acres? What will it cost to inclose it at \$1.20 per rod?

4. Find the cost of plastering the walls and ceiling of a room 40 ft. long, 15 ft. wide, and $22\frac{1}{2}$ ft. high, at 30 cts. a square yard, allowing 1,200 sq. ft. for doors, windows, and base-board.

5. In what time will \$450 amount to \$544.50, at 8 per cent. per annum?

6. Find the cost of the lumber, exclusive of the posts, for a five-board fence around a lot 180 ft. long and 60 ft. wide, the boards to be 6 inches wide and costing \$15 per M.

7. Divide the L. C. M. of 4, 5, 6, 7, 8, by the G. C. D. of 72, 96, 120, 384.

8. Multiply 7 tons, 15 cwt., 10.5 lbs., by 1.7.

9. (a) What per cent. of \$480 is \$26.40?

(b) Find the value of $13\frac{3}{4}$ lbs of gold at \$19.50 per oz.

10. (a) If 7 2-5 yds. of velvet are worth \$17 1-5, what is $\frac{1}{4}$ of a yard worth?

(b) Find the cost of carpeting a room 36 ft. long and 24 ft. wide, the carpet being $\frac{1}{4}$ of a yard wide, and costing \$1 $\frac{1}{2}$ per yard.

Third Grade—100 Credits.

1. Find the cost of

481 $\frac{1}{2}$ lbs. lard, 12 cts.

75 lbs. sugar, at $12\frac{1}{2}$ cts.

28 lbs. starch, at $18\frac{3}{4}$ cts.

509 $\frac{3}{4}$ lbs. tallow, at 16 cts.

2. If 5-7 of an acre of land is worth \$30 5-6, what will be the value of 20 4-7 acres?

3. Reduce 72 days, 21 hours, 52 min-

utes to seconds, and prove by reduction ascending.

4. What will be the expense of digging a cellar 24 ft. long, $14\frac{1}{2}$ ft. wide, and 10 ft. deep, at 30 cts. a cubic yard?

5. The sum of two numbers is 158 4-5, and their difference 87 5-6; find the numbers.

6. A room is 20 ft. long, 16 ft. wide, and 12 ft. high. What will it cost to plaster the walls and ceiling, at 25. cts a square yard?

7. Find the L. C. M. of 153, 204, 102, and 1020.

8. How many cords in a pile of wood 48 ft. long, 16 ft. wide, and 10 ft. high?

9. At \$14 per ton, what will 3,380 lbs. of hay cost?

10. Bought a quantity of staves for \$160 $\frac{3}{4}$, and a lot of lumber for \$1,136 $\frac{3}{4}$. Sold the staves for \$205 $\frac{1}{2}$ and the lumber for \$1,240 9-16; what was my profit?

Fourth Grade—100 Credits.

1. Find the sum of $42\frac{1}{2}$, $34\frac{3}{4}$, 56 4-5, and 124 5-12. Subtract 289 9-10 from the sum, and multiply the remainder by $7\frac{1}{4}$.

2. Find the prime factors of 50,050.

3. Reduce 3060-5940 to lowest terms.

4. If 4 tons of hay cost \$48, what will $7\frac{3}{4}$ tons cost?

5. Find the cost of

90 lbs. coffee, at $12\frac{1}{2}$ cts.

12 lbs. sugar, at 16 cts.

15 gals. molasses, at 42 cts.

$12\frac{1}{2}$ lbs. tea, at 66 cts.

6. If $\frac{3}{4}$ of 12-36 of 15 yards cost 3-9 of \$42, what will 5-13 of 4-7 of 91 yards cost?

7. Reduce to decimals 18-345 and 3-216.

8. The dividend is $21 \times 15 \times 33 \times 8 \times 14 \times$

17, and the divisor is $20 \times 34 \times 22 \times 27$. Find the quotient.

9. Change 1,006 17-97 to an improper fraction.

10. If a laborer earns \$485 a year and his expenses are \$380, in what time can he save enough to pay for a farm of 120 acres, worth \$3.50 per acre?

Fifth Grade—100 Credits.

1. Add 64,318, 5,793, 56,109, 183,914, and 628,745. Multiply the sum by 658.

2. Find the amount of the following bill:

14 tons of hay, at \$17.

128 lbs. wheat, at 2 cts.

11 doz. canned peaches, at \$2.50 per doz.

24 lbs. sugar, at $11\frac{1}{2}$ cts.

3. If 19 hogs cost \$76, how many can you buy for \$168?

4. What is the sum of $\frac{3}{4}$ and 5-12.

5. (a) Reduce to improper fractions $9\frac{7}{8}$, 16 4-13, 8 11-12.

(b) Add 15 5-17, 27 13-17, and 42 9-17.

6. If a boy earns \$12 a month, and saves half of it, how long will it take him to pay for a suit of clothes costing \$24?

7. (a) Divide 702,568 by 93.

(b) Divide 141,011 by 9.

8. If I buy 24 head of cattle at \$13.50 a head, and sell them all for \$500, what profit do I make on the transaction?

9 3-5 of $75+9-10$ of $120+5-7$ of 91= what?

10. If you buy a knife for \$1.25, a pair of gloves for 75 cts., a doz. handkerchiefs for \$2.50, and a necktie for 75 cts., and give the clerk a twenty-dollar piece, how much change should you get back?

LITERARY NOTES.

The April *Popular Science Monthly* contains among others an article by Herbert Spencer, The Development of Political Institutions; The Black Races of Oceanica, by Dr. Verneau; Physical Education, by Dr. Felix Oswald; Origin and Structure of Volcanic Cones, by H. J. Johnston-Lavis, and Man and the Vertebrate Series, by Charles Morris.

Among the articles in the April *Atlantic* are the following: The Portrait of a Lady, by Henry James, Jr.; Concerning Dead Love, by Rose Terry Cooke; What We Learn from Old Aryan Words, by John Fiske; The Longing of Circe, by Cameron Mann; Voltaire's School Days, by James Parton; The Wives of Poets, by Wm. M. Rossetti; Her Ghost, by Louise Chandler Moulton; The British Philistine, by Richard Grant White; Johnson's Garrison, and other Biographies.

The leading articles in the March-April number of *Education* are The British Race, by Prof. J. H. Seeley, author of *Ecce Homo*, England; Richard Grant White *vs.* The Public Schools of the United States, by B. G. Lovejoy of Washington, D. C.; Is Our Public School System a Success? by George J. Luckey of Pittsburg, Pa.; The Printing Press as an Instrument of Education, by Wm. T. Harris, L. L. D.

A paper by R. W. Emerson, on his personal impressions of Thomas Carlyle, made up from his unpublished letters written at the time of his first visit to England, will appear in *Scribner* for May. The publication is made by special arrangement with Mr. Emerson and the Massachusetts Historical Society, before which the paper was read, and in the minutes of which it is to be printed after its appearance in *Scribner*.

Harper's Magazine for May will contain an article on George Eliot by an intimate London friend, and also Mr. Conway's recollections and conversations with Thomas Carlyle.

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PROCEEDINGS OF THE STATE ASSOCIATION OF TEACHERS.

THE fifth annual session of "The Teachers' Association of California" was held in San Francisco, at Lincoln School hall, Dec. 28th, 29th, and 30th, 1880.

TUESDAY, DEC. 28TH.

The association was called to order at 10:30 A. M., by the president, Prof. H. B. Norton of the State Normal School.

An address of welcome was delivered by Superintendent John W. Taylor of San Francisco. In the course of his remarks he alluded to the attacks made on the public schools of this city by their enemies, and met and refuted all the charges. He said that the Public School Department of San Francisco was accused of extravagant management and unnecessary expenditure. He claimed that investigation and revelation would establish the fact that the Public School Department was not mismanaged, and that much greater want of economy, more dishonest expenditure and mismanagement, would be found in every other department. Some people wanted religion in the schools, but he was strongly opposed to the idea. Religion, he thought, was properly a home duty, and the attempt to introduce religion in the public schools would exclude a large number of children from their privileges, and keep out a far greater number than it would attract. He spoke warmly of the proverbial hospitality of San Francisco, and trusted that their visitors would find that their

present visit would enhance our reputation in this respect, and in conclusion he welcomed all the visiting teachers very heartily.

Professor Knowlton gave a very clever reading, entitled "How Ruby Played."

The Chair was requested to appoint a committee of twelve to nominate officers for the ensuing term; also, a committee of seven on resolutions, and report the same during the afternoon session.

W. A. Newcum of Monterey, and Miss Mary Madden of San Francisco, were appointed assistant secretaries.

The association then adjourned to 1:30 P. M.

AFTERNOON SESSION.

At the time appointed, the President called the association to order, and announced the following committees :

Committee on Nominations—Messrs. Swett and Denman of San Francisco; Sill of Oakland; Gilson of Alameda; Thompson of San Benito; Goin of Yolo; Martin of Santa Clara; Hobbs of Santa Cruz; Yaeger of Tehama; Shearer of Monterey, and Waterman of Stockton.

Committee on Resolutions—Mr. Knowlton of San Francisco; Mr. Oliver of Santa Clara County; Miss Kate Kennedy of San Francisco; Mr. Augustine of Marin County; Mrs. Griffith of San Francisco; Mr. Egenhoff of Mariposa County, and Jesse Wood of Butte County.

Ex-Superintendent A. L. Mann of San Francisco, then delivered an able address on "Horace Mann," of which we give the following abstract.

HORACE MANN.

With the pious purpose of clearing away the moss and weeds from his already fading epitaph, and of setting once more in relief the educational principles that he discovered or illustrated, I have prepared this paper upon the eminent scholar, lecturer, college-president, statesman, and teacher, Horace Mann.

The story of his life must be summed up in a few words. He was born in 1796, in a country town of eastern Massachusetts. He was a poor, hard-worked farmer's boy. He obtained a college education at the expense of unflinching toil, and discouraging privations. He was admitted to the bar at the age of twenty-seven, and soon rose to a high rank in his profession. At the age of forty-one, when in the full tide of professional and political success, with wealth and fame securely in his grasp, he accepted the position of secretary of the Board of Education of the State of Massachusetts, at the paltry salary of \$1500 per annum. This position he held for twelve years. He was then for four years member of Congress, and for six years president of Antioch College, Ohio. He died in harness, at the comparatively early age of sixty-three, after a most toilsome and useful career, in which he accomplished marvels in the face of incredible difficulties, not the least of which were, a delicate constitution and feeble health.

He found the schools of Massachusetts in a deplorable condition. They had drifted far away from the original conception of the pilgrim fathers, and were fast approaching what some persons of our own day seem to think a desirable anchorage—*poor* schools for *pauper* children.

With characteristic ardor, he set to work by lectures delivered in various parts of the State, by abstracts of school statistics, by able and exhaustive

annual reports, and by a brilliantly edited "Common-school Journal," to mold public sentiment to such a form that the ancient idea of free, universal education might be restored in all its extent and perfection. His reports and lectures written at this time are interesting and instructive to the highest degree. We find in them an arsenal of arguments with which to repel and put to rout the enemies of free public instruction.

His services to the schools in matters of detail were invaluable, and almost innumerable. He established normal schools, teachers' institutes, founded a common school-journal, introduced State reports, school libraries and apparatus, brought about the complete secularization of the schools, and the addition of physiology, vocal music, and drawing to the course of study. Besides this he discussed modes of teaching and government with great clearness, and even minuteness, so that his reader is at no greater loss to find his opinions upon the best way of teaching grammar, or preventing whispering, than what he thought about school architecture, or compulsory education. And whether we agree with him or not, we find his ideas upon all these subjects fresh, suggestive and useful, to a surprising degree.

Of the disputed points in school management, his remarks upon emulation as a motive to study, and upon corporal punishment, are, perhaps, the most interesting. His ideas were lofty; he would never tolerate an appeal to a lower motive when it was possible to appeal to a higher one. Yet he always made due allowance for human imperfection; he moved among the clouds, yet kept within easy reach of the earth. In 1842, Mr. Mann spent six months in Europe. These six months, nominally devoted to rest and recreation, were among the most laborious and fruitful of his wonderful career. He visited the schools, prisons, insane and deaf-mute asylums of England, Scotland, France and Germany, and embodied the results of his observations upon schools in the long and able report for 1843.

Of the forty years of Horace Mann's life spent in actual conflict with the problems of adult manhood, but twelve were nominally devoted to the common school, and yet it was in the common school that he accomplished his greatest work.

Before he was chosen secretary of the Board of Education, while he was member of Congress, and president of a college, the common school absorbed much of his care and attention.

On the other hand, while it is true that the common school was the chief object of his affections and labors, his heart was too large and too overflowing with genuine love of mankind not to give freely of its abundance to every good and benevolent work. His efforts in behalf of the deaf and dumb, of prison reform, of the insane, of temperance, of the abolition of slavery, and of the enfranchisement of women, would place him in the front rank of philanthropists, were they not overshadowed by his mightier labors for the common school.

It is to his moral grandeur that he owes his splendid success. He was *good* as well as *great*. Physically, he was not strong. Early privation and premature excessive toil made him a feeble man. His intellectual talents, had they been accompanied by want of principle, or love of pleasure, would not have raised him much above mediocrity. But his whole being was so filled with love of God, and love of man, was so illuminated with a fiery zeal of doing good, was so urged on by hatred of evil, and a heaven-descended energy to destroy it, that he became, in the hands of Providence, an engine of tremendous power, whose mighty works will long outlast the best endeavors of abler but morally inferior men.

The president then spoke of a subscription started one year ago for the purpose of publishing the proceedings of the association. As a sufficient sum

was not raised, the money contributed was subject to the call of the subscribers. State Superintendent Campbell donated his subscription to the general fund of the association.

Mr. Swett announced that Miss Kate Smith had not been notified in time, and so the reading of her paper would be postponed until to-morrow afternoon, when she would take the place of Mrs. S. B. Cooper, who was ill from over-work.

As Mrs. Fisher was absent, Mr. Swett gave, as a preface to Miss Smith's paper, an interesting account of the Kindergarten Schools of San Francisco, and the work they are accomplishing.

Professor Towle of the Vallejo High School then presented a paper, entitled "Honest Work in the Essentials," which we give in condensed form:

ABSTRACT OF "HONEST WORK IN THE ESSENTIALS."

The important question is, how far are teachers responsible for the training of their pupils? The answer is: such training being the most valuable work to be done in this life, they should be honest in their endeavors to find how much their abilities will enable them to accomplish. But this work ranges wide and high; what parts are of the greatest importance?

First, teach that work of all kinds is honorable, that an education should be obtained to enable one to be more serviceable to himself, and to the community in which he lives. To the honest mind, the greater the intellectual development, the wider the range of possibilities. The higher such a mind rises, the farther its vision extends, the more it sees to investigate, and the less does it take pride in its present attainments.

But there is not time in our public schools to develop intellect very far. Then during the few years of school life, pupils should give their attention to such knowledge as every one must acquire for success in after-life.

Then, second, teach pupils to use thought. In general, use such methods of instruction as will lead pupils properly to make discoveries in the realm of thought. Assist pupils to cultivate the imagination and the judgment; for these are essential to this important power. Education does not consist in passing through a certain number of text-books; and it is not found in the cram for periodic examinations. Education founded on honest principles, will be possible to the greatest number, when the kindergarten system, properly modified for the age of pupils, shall extend through school life.

There are certain branches of study in which every one should be trained while in school. First in importance among these necessary studies, I would place language. This study should be continued throughout school life. One should be able to speak his language intelligently, having a good knowledge of its words, so that they may be used correctly and pronounced properly. He should also learn so thoroughly the structure of his language, and its idioms, that he may be able with ease to construct clear, grammatical sentences, which express to others the thoughts of his own mind. He should know by practice how to place written language on paper in a legible hand, and in accordance with the rules of punctuation.

To speak well requires trained organs of speech. All the sounds of one's language should be uttered distinctly. The voice should be cultivated to make it pleasant to hear. What a power does that person possess who can talk easily in good language, with distinct articulation, and with a cultivated, musical voice! Teachers should eliminate all slang from their own language, and, as far as possible, prevent its use by their pupils.

The penmanship of pupils should be plain, bold and distinct. Hair lines and flourishes should not be allowed in the penmanship in common use. Written language should be of such a character as to be read at a glance by the reader, though written rapidly by the writer.

Every pupil should, if possible, acquire the ability to draw plans or diagrams in illustration of his own ideas. The hand and eye should be sufficiently trained in industrial drawing to enable one to prepare all ordinary plans or drawings for mechanical purposes. Some practical, common-sense method should be adopted by which the necessary training may be accomplished in a thorough manner without the use of very much time.

In arithmetic the fundamental rules and common and decimal fractions should be thoroughly taught. Every pupil should be able to add columns of figures rapidly and accurately. Practice in addition, subtraction, multiplication, and division, should be continued throughout the school, or until every one is expert in these simple calculations. To be quick and accurate in these common calculations is worth far more for success as a business man than to have a general knowledge of all the mathematics in existence.

The essential part of geography is about one-fourth of what is usually found in our text-books. Maps are found everywhere; and why try to carry in the mind a recollection of all the minutiae of the earth's surface? Place in readers, in connection with history, a great part of the interesting facts concerning the earth's surface.

Every person, male, or female, ought to have a fair knowledge of the present workings of our government, and should know something of its rise and progress. No person can properly exercise the elective franchise, until he has obtained a good knowledge of governmental affairs. This knowledge is essential to the success of a business man; for the real politics of a country have much to do with the conditions that make business a success or a failure.

Again: it is very important that every one should have a good knowledge of the human body. This should include such a knowledge of the structure and use of the different parts that one could talk intelligently with a physician. The laws of health should be well understood and practiced. Teachers should see to it that all arrangements in regard to health should, for their pupils, be carefully carried out, while they are under their control. Teachers should speak plainly about the evils to growing boys caused by the use of tobacco. The use of tobacco leads to the use of alcoholic drinks; and besides, it is a filthy, ungentlemanly habit. No young man can afford to enter upon the duties of life handicapped in such a way.

It is essential that every one should know how to use money properly, in the necessary expenditures of living. No one thing will be of more value in preventing useless expenditures than to keep careful accounts. Pupils should be taught enough of practical book-keeping to enable them to keep personal expense accounts. They should be encouraged to do this just as soon as they have any money to expend. The keeping of such accounts may enable one to save money for future needs, or at least to keep out of debt, and thus prevent much misery or unhappiness in after-life.

To be able to use good language; to have a well-cultivated voice; to know how to represent one's ideas on paper; to be quick and accurate in all calculations; to have a fair knowledge of the geography of the world, and its history, especially the history of one's own country, including its political progress and present condition; to understand the structure of the human body, and have a good knowledge of its laws of health; and to be able to keep simple accounts of money matters—these are essential to success in every occupation of life. These must be acquired sooner or later in life, or else the person works at a disadvantage, meeting with failure where he might have success.

But knowledge, or rather the ability that knowledge gives, if proper man-

ners and good morals are wanting, is an unbalanced power that will prove dangerous to the person, and to the community in which he lives. Every youth should be trained to know his own rights and the rights of others. He should understand the weak places of his own mind, and be encouraged to strengthen them as fast as possible. Self-control is gained by acts of self-denial. Pupils should be made to understand that strong passions in them may not be an evil. The strongest men morally are those that have successfully gained control of strong passions. If obedience to all school regulations were required for the good of the pupil, and in such a way that the pupil could so understand it, and not seem to be on account of the "I-say-so of the teacher," and required in such a way that the teacher appears a tyrant, the greatest good to be derived from school training would accrue to the pupil with the least necessary annoyance to the teacher.

It is essential to the life success of our pupils that they should have habits of neatness, punctuality, carefulness, thoughtfulness, politeness, frugality, and thoroughness. Moreover, their sense of right and justice should, if possible, be trained to act in a plane so high, that they will be not only law-abiding, but conscientiously just in all their transactions.

All such qualities of the mind-*morale* should be carefully inculcated throughout the period of mind development.

Teachers, then, should in habits, in manners and in morals, be what they would have their pupils become. With what force can a teacher direct his pupils to study, to think, if he does no special studying or thinking himself? What value will be attached to his instruction concerning the laws of health, if his habits are contrary to his instruction? If one's expenses outrun his income, or if, with a fair salary, nothing is saved for the future, can such a one teach frugality? Are we as teachers careful to teach punctuality by being punctual everywhere? How much of neatness will our pupils learn from us, if our desks are always in disorder, and our appearance shows lack of care? How much of the unjust and might-makes-right practice of after years is due to the overbearing, domineering spirit of the school-room? Shall we, being indifferent to the rules for our own government, teach our pupils to be law-abiding?

What will be the result of the loud voice and noisy step? Not quiet gentlemanly deportment—not pleasing, respectful manners—but rude, swaggering behavior, showing little regard for the feelings of others.

Success in our business obliges us to live what we teach, content with the pure pleasures afforded by such a life, and by the satisfaction of knowing that by example as well as precept we teach the truth.

We can never make teaching a profession, acknowledged as such, until we work as professional men work. They give their lives to their work, and become experts therein; so must we. They study and work and live for success, and so must we. We should so work with those under our care that we may see growing up about us young men and young women whose real success in life will honor our training and honor us.

The association then adjourned till ten o'clock next day.

WEDNESDAY, DEC. 29th, MORNING SESSION.

At the opening of the session President Norton read a letter from Prof. Burnham, relating to the Lick Observatory, and regretting that it would be impossible for him to read a paper before the association on account of absence from the State.

State Superintendent Campbell then delivered an address on "The State and Higher Education." As the substance of it forms a part of his report, (*vide* p. 25 to 28) we give but a short abstract of it: "All persons receive

advantages from any discovery or work, and all labor conduces to the good of the commonwealth. Public virtue and public intelligence constitute the commonwealth, and it is no part of the State's function to furnish any man or woman a livelihood. This must be accomplished by individual efforts. Higher education means that which pertains to the highest moral and intellectual cultivation." The speaker quoted largely from Milton, Arnold, Gilman, Bishop Harris, and others, to show their ideas of higher education. "The birth-right of children is education, and the object of education is to teach us to be able to use useful things for the welfare of society. Wisdom and non-wisdom are common property. No other subject is so much discussed as higher education, and there is no other subject about which so many fallacies exist. Education of the mind is indispensable to the well-being of the State. The necessity of getting a living is the selfish interest of every man, while the necessity of giving his children an education has no such visible effects. Civilization will sweep onward and get beyond us, unless we strive to keep onward with it. All children, both those of rich and poor, should be given liberal opportunities to make the most of themselves. This we claim in the name of high virtue and intelligence."

President Norton asked for remarks on any of the readings or papers.

Mr. Campbell's paper was followed by remarks from Mr. Blake, who said that the superintendent's paper was exceedingly good, but that much was omitted. Too much was said about the cultivation of the intellect, to the exclusion of the cultivation of the heart. Mr. Blake warmed up over his subject, and insisted that the heart, as well as the mind, must be educated.

Mrs. Kate P. Fisher of Oakland followed with one of the most interesting papers of the session, entitled: "Proper Reading for School Libraries." At its close, State Superintendent Campbell obtained the manuscript for publication from his office, and promised to place a copy of it in every school district in the State. It has also been published in full in *THE PACIFIC SCHOOL AND HOME JOURNAL* for February and March. Therefore, we give no abstract of it.

The association then adjourned to 1:30 P. M.

AFTERNOON SESSION.

The exercises of the afternoon were opened by the reading of an excellent paper on the "Chatauqua Literary Science Circle," by Miss L. M. Washburn of San Jose, Secretary of the California Branch. This paper will also be published in full in the June number of the *JOURNAL*.

Professor McChesney then introduced President Norton, who delivered the annual address before the association. His subject was "Joins in Our Armor." It is published in full in *THE PACIFIC SCHOOL AND HOME JOURNAL* for March.

Miss Kate Smith of San Francisco read a sharp, spicy paper upon the "Kindergarten," in which, in a most vigorous, effective manner, she replied to the attacks of its enemies. She said that the kindergarten had four principal classes of opponents. The first were the old fogies—men who liked nothing new, and who would rather walk fourteen blocks than communicate with a friend through a telephone. The next were the really ignorant, and

these she passed over as worthy of no notice whatever. The third class were the lunatics, who called it all gingerbread work. These, of course, could never be convinced. The last she termed the scattering class, composed partly of dyspeptic persons, who thought the system looked too well to be of any service, and partly of those who were not friendly, because they had never been shown the beauties of its operation. She advocated the introduction of the system into all the higher schools as well, contending that it created a desire for knowledge, and stimulated the powers for further acquisition. The meeting then adjourned until 8 o'clock in the evening when Rev. C. C. Stratton lectured on "Christian Higher Education."

SYNOPSIS OF LECTURE ON CHRISTIAN HIGHER EDUCATION.

1. Burke has said that "*Man is a religious animal.*" This is as true, as that man is a physical and intellectual being. The evidence of the existence of a strong religious nature appears in all the history of the race, and throughout all nations and classes. A belief in immortality is seen in the burial-mounds of prehistoric races, as well as in the remains of the great stone-builders of western Europe. The scanty remains of early Hindoo, Persian, Egyptian, and Chaldean, as well as Greek and Latin literature, evince the strength of the religious sentiment. In the most skeptical nations or periods of the world, belief has been the rule, unbelief the exception.

The loftiest minds as well as the lowliest, and, if possible, in still higher degree, have been under the control of this religious nature. In support of this it is but necessary to mention the names of Newton, Kepler, and Herschel in astronomy; Milton and Shakespeare in poetry; Cowen and Agassiz, McCosh, Dana, and LeConte, in science; and Washington, Webster, Hamilton, Bismarck, and Gladstone, among statesmen. Even among men of special training, and therefore of less philosophical elevation, the sensitiveness to the imputation of atheism evinces the strength of the religious sentiment.

Christian consciousness affords conclusive evidence of the same truth from a less familiar source. This is a court of last resort. All knowledge comes through consciousness—consciousness of sensations, of reasoning processes, of mental or religious states. But five millions of Christians in the United States attest the reality of religious experience. When we impeach their testimony, we invalidate all evidence, and even cast doubt upon the sanity of the race. But they testify to conversion, and the witness of the Spirit, with a clearness and agreement that leave no room for doubt. In this way Christianity takes its place among the most assured of the inductive sciences.

2. *Neither government nor society could exist without the cultivation of morality and religion.* But morality and religion are inseparable. On this point quotations may be made which should carry conviction to all minds. Guizot, quoting Vinet, says: "To attempt to distinguish morality from religion is to attempt to distinguish a river from its source."

WASHINGTON AND HAMILTON.

It is known that the farewell address of Washington was just outlined by himself, submitted to Hamilton and Jay, and then with their emendations published. I quote now from that immortal document, which comes to us with such high sanctions: "Of all the dispositions and habits which lead to political prosperity, religion and morality are indispensable supports. In vain would that man claim the tribute of patriotism who should labor to subvert these great pillars of human happiness, these firmest props of the duties of men and citizens. The mere politician, equally with the pious man, ought

to respect and cherish them. A volume could not trace all their connections with private and public felicity. Let it simply be asked, where is the security for property, for reputation, for life, if the sense of religious obligation *desert* the oaths which are the instruments of investigation in the court of justice? And let us with caution indulge the supposition that *morality can be maintained without religion*. Whatever may be conceded to the influence of refined education, or minds of peculiar structure, reason and experience both forbid us to expect that national morality can prevail in exclusion of religious principle. Who that is a sincere friend to free government can look with indifference upon attempts to shake the foundation of the fabric?"

And both morality and religion are essential to the perpetuity of the State.

DANIEL WEBSTER,

In his famous "Plymouth Rock Oration," said: "Lastly, our ancestors established their system of government on morality and religious sentiment. Moral habits, they believed, cannot safely be trusted on any other foundation than religious principle, nor any government be secure which is not supported by moral truth."

"Whatever makes men good Christians makes them good citizens."

"Our fathers came here to enjoy their religion, free and unmolested, and at the end of two centuries there is nothing upon which we can pronounce more confidently, nothing of which we can express a more deep and earnest conviction, than the inestimable importance of that religion to man, both in regard to this life, and that which is to come. Let us cherish these sentiments, and extend this influence still more widely, in the full conviction that that is the happiest society which partakes in the highest degree of the mild and beneficial spirit of Christianity."

In his great argument in the Girard will case, Mr. Webster introduces his plea with the following strong language: "I proceed, therefore, to submit, and most conscientiously to argue."

After quoting Christ's invitation to children, he says: "And not only my heart and my judgment, my belief and my conscience, instruct me that this great principle should be obeyed, but the idea is so sacred, the solemn truths connected with it so crowd upon us, it is so utterly at variance with this system of philosophical morality which we have heard advocated—viz., that religion is not the basis of morals—that I stand here in fear of being influenced by my feelings to exceed the proper limits of my professional duty."

The counter assumption he pronounces: "Mere, sheer, low, ribald, vulgar deism and infidelity." And in view of the postponement of all religious education until after the boy is eighteen, he asks: "What would become of society itself? how could it exist?" Because Girard College excludes the religious teacher and religious instruction as the basis of a moral and correct life, Mr. Webster pronounces it "unwise in all its frame and theory; while it lives it will lead an annoyed and troubled life, and leave an unblessed memory when it dies."

Guizot, Hamilton, Washington, Webster—what a constellation! And in view of these quotations, how very frothy seem the words: "Moral instructors"—sometimes heard in connection with our State institutions. Moral instructors for the penitentiary, for thieves and murderers, or any other sinners for that matter. As well talk of arnica for small-pox, or bread-poultice for leprosy.

3. *No system of State education is complete which fails to provide for all the powers of the man, and all the needs of the State in that direction.*

But this word "complete" may have different meanings. There may be complete education in astronomy, in chemistry, in botany, in geology; or a

complete education may include a group of these branches, and embrace a course in languages and literature as well. But a system framed after this ideal, though it ascend through all grades to the State and national universities, if it leave out cultivation of the moral and religious nature, does not completely meet the needs of the individual and the State.

4. *Now the system of education coming into vogue in the United States is complete in this partial, but not in any compulsive, sense.*

On the one hand, religion is not to be taught in the schools. Morals may be, but the Bible, the basis of morals, is excluded. This is the prevailing rule in California, and is coming to be throughout the United States.

On the other hand, the churches must not share the school fund. The declaration of one of the great parties and its leaders on this head is explicit. The Republican Convention of 1876 said: "We recommend an amendment to the Constitution of the United States, forbidding the application of any public funds or property for the benefit of any schools or institutions under sectarian control.

The Chicago Convention of 1880 recommended "That the Constitution be so amended as to forbid the appropriation of public funds to the support of sectarian schools."

The utterances of ex-President Grant, President-elect Garfield, and Senator Blaine are in the same view. Observe, I am not criticising, but stating the case.

5. *Are moral and religious education, then, to be neglected?*

Very few would answer this question in the affirmative. Some claim that this is a Christian government, and that the Bible should be maintained in the schools at all hazard. Others feel that the public schools are too vital to be periled by arraying against them all influences hostile to the Bible. This prudential consideration is reinforced by that sentiment of justice which is unwilling to force men to pay taxes for what they cannot indorse and use. But the prevailing sentiment is, so far as the common school is concerned, religious instruction may be remitted to the church on the Sabbath, while secular is imparted by the State during the week.

6. *This plan encounters great difficulties when applied to higher education.*

According to the settled policy of our system, religious instruction must be excluded from the high school and the university, as well as the common school. In the first place, the receptive mind of childhood has now given place to the inquiring and doubting mind of boyhood and young manhood. The questions presented to the advancing student are strikingly portrayed by Dr. Cocker of Michigan University. "The problems of science are becoming more and more genetic problems—that is, they have ceased to be questions of classification, and have come to be questions of origin—origin of force, of life, of species, of mind, of language, of society, of civilization, of religion. It is clear as noonday that the science professor cannot discuss these questions without abutting on the final issue, and pronouncing for a God, or no God; a providence, or no providence; a soul, or no soul. Until these questions have a final settlement, we had better keep open our church colleges.

In the second place, the college student is away from home—from its religious atmosphere, its wholesome restraints, its Sabbath-schools, and its churches. All of these bonds have been severed at once. What now is to hold them steady? He is thrown into the intense, inquisitive life of the college, where questions of cause, force, providence, duty, destiny, are up, and will not down. Who is to guide him in his inexperience and danger? He is surrounded with young spirits, buoyant with a new sense of liberty, unsoubered by a sense of responsibility. If religion is ever needed in society to curb and control men, is it not here? In such a community, unleavened with the religious atmosphere, two things will almost certainly follow. Skeptics will be

confirmed in their unbelief, and believing students will become ashamed of their faith. If the sudden change from restraint to perfect liberty be not followed by license, insubordination, and roystering, the institution will be fortunate indeed. The conclusion follows irresistibly, that in all higher education, and more especially in non-professional schools, religious instruction is necessary for the safety of the student, and the welfare of the institution.

7. *Moral and religious education are necessary in order to the complete equipment of the student for after life.* No other class of ideas is more liberalizing or elevating. At the head of these I place the conception of God filling immensity, and inhabiting eternity. Bishop Ames once remarked that no one could open his mind sufficiently to take in the idea of God without giving entrance to a troop of lesser ideas at the same time. One can almost guess the rank of a nation by its conception of God.

Next to this may be placed a belief in immortality. The degree of forecast in the individual grades him in the scale of humanity. The child thinks for the moment, the boy for the day, the man for a life-time, the Christian for eternity.

These two conceptions, almost alone, have developed characters as elevated as the studies of a Humboldt or a Herschel.

This education enlarges the sympathies, while it expands the reasoning powers. These are the motives of mind. It is much to be a great heart, it is almost everything in the leaders of social reforms. But Christian culture carries our sympathies round the globe. Herein lies the secret of the most truly elevated character.

The cultivation of the moral reacts upon the mental man. Many a giant has slumbered until the spring of his moral nature was touched. Press that and the mind bounds. Hence moral and religious revivals have always led to intellectual.

8. *This education of all the powers of the man should proceed at the same time.* We cannot prevent this if we would. The connection between the powers of the man is so intimate, that we cannot educate the worldly half, and not affect the spiritual. The relation of the teacher to his instructions is so close that the student will always read his mind and heart through his tongue and life.

The connection between the sciences is so close that the spiritual will continually intrude into the natural. It took a Humboldt to write a *Cosmos* without the mention of God, and even he must have failed in the presence of a hundred eager students. Hence all institutions are christian or anti-christian, according to the learning of their instructors. "He that is not for me is against me," is nowhere more emphatic than here.

9. *But the co-education of all the powers of the man is not provided for in any higher institutions of learning, save the religious.*

They may be exposed to excessive multiplication; they may lack in proper buildings and equipments; their professors may be poorly paid; but they do not teach denominational science or letters. And for this work they possess especial advantages. They appreciate at its highest valuation the manhood of their students; they are inspired by a noble enthusiasm; they are actuated by a lofty conscientiousness; they possess the correct ideal of education—an ideal which embraces all the powers of the man, and comprehends all the sciences of the universe.

10. *These institutions have had a long and brilliant history.*

The first universities of the old world started under the auspices of the church, and still make theological courses prominent in their instructions. The denominational schools of the new world took culture under their sheltering wings when it was prostrate and patronless. Subtract their contributions from the general sum of culture, and the remainder would not be worth the preserving. We may estimate their value in the fact that the State institutions of this

country could not accommodate one-fourth of those who are pursuing advanced studies; and in the additional fact that nearly all of our eminent statesmen, scientists, men of letters, and educators came from these schools. Even Michigan, Cornell, and our own State University are not exceptions to the general rule.

11. *Seeing, then, that the denominational schools are a necessary element in our system of instruction, what are the duties of their friends toward them?*

They should be put upon the best financial footing, and supplied with all the buildings, apparatus, and libraries necessary to keep abreast with all branches of knowledge. At the same time the religious instructor should never permit the secular teacher of any branch of knowledge to distance him in his acquirements or methods.

12. *The duties of the State follow with equal clearness.*

Denominational schools should be exempt from taxation. They are doing a work which the State would be obliged to do, should they retire from the field. For this reason they should no more be taxed than the state-house, or the common-school-house. When the speaker was visiting Harvard last summer, he was asked respecting the policy of the State of California toward private schools. The reply was, that the State taxed their buildings, their grounds, and their funds. "Why that is ghastly," said President Eliot, in response to a statement of the disgraceful fact.

In the second place, the State should recognize and indorse their work. True they are private institutions in the sense of being supported by private beneficence, and controlled by private management. But they are doing necessary work; and work which, as our government is constituted, cannot be done by the State. Hence, their private character is in a large measure lost. They are not for personal or denominational ends, so much as in the interest of general intelligence, and especially of christianity and good morals. Their recognition might demand a certain measure of inspection and supervision; and to whatever extent this is necessary to guarantee thoroughness, those schools should cheerfully submit. With this safeguard their diplomas should be worth as much as those issued by institutions controlled by the State.

And this will surely come to pass. Did I picture to myself for the future, a State without churches, without religious schools, or with religious schools under ban, then might the most gloomy apprehensions arise for the welfare of our beloved State. But this cannot be. Christianity will here as elsewhere accomplish its beneficent work. Christian institutions will here as elsewhere enjoy equal protection of the laws, and here as elsewhere will the State accord equal recognition of their inestimable services in the advancement of good morals and sound learning.

THURSDAY, DEC. 30th, 1880.—MORNING SESSION.

The association was called to order by President Norton at 10 o'clock A. M.

The first on the programme being miscellaneous business, the Committee on Nominations, through their chairman, John Swett, made the following report, which was adopted:

For President—James Denman of San Francisco. *For Vice Presidents*—C. W. Childs of San José, Jesse Wood of Butte County, Chas. H. Ham of San Francisco. *For Secretary*—A. H. McDonald of San Francisco. *For Executive Committee*—J. C. Gilson, of Alameda, E. R. Sill of the State University, John W. Taylor of San Francisco, E. Knowlton of San Francisco, Fred. M. Campbell of Sacramento. *For Treasurer*—Mrs. A. Griffith of San Francisco.

By motion of James Denman, Mr. John Swett was added to the Executive Committee.

The Executive Committee, through Mr. John Swett, presented the following report, which was adopted:

"That the State Teachers' Association of California hold its next meeting on Tuesday, Wednesday and Thursday of the week between Christmas and New Years, 1881; and that it be held in San Francisco."

Mr. Bell of Los Angeles was introduced, and read a paper entitled "Wet the Ropes." We are sorry that we are unable to give even an abstract of this paper.

Professor Sill of the University of California then delivered an interesting and logical address on the subject, "Shall we have Free High Schools?" It is published in *The Californian* for February. A few copies have been bound in pamphlet form, and sent to high-school principals, boards of education of cities, etc. We therefore give only a brief abstract of it:

"It is an old folly to say that one man is as good as another. There are stupid men and intelligent men, and it will not do to ignore the fact. Taken early in life, no man need belong to either the stupid or the ignorant class. There is no reason why all men should not belong to the higher class in heart and soul. Lifting people from lower to higher classes can only be accomplished by a free and liberal education. A republic cannot long exist if the youth grow up to be vicious and ignorant.

"By intelligence we mean those higher faculties of the soul which distinguish man from brute. It is sense, not the senses, that needs to be trained, and it is the high school that accomplishes this work. This must be done, and it is the State which is to do it.

"The opposition to high schools does not come from the poor man. comes from the arrogant rich, the vaunting demagogue, or the bitter, bigoted sectarian."

Mr. F. P. Perkins, Librarian of the San Francisco Free Public Library, then read a paper on "Reading and Libraries." He said the public library is an important and proper piece of the great machine of education.

"There are two principles which define the proper relations existing between the public library and the public school: First—The object of teaching is to enable pupils to teach themselves. Second—A main problem of school work is to interest pupils in it. The library supplies collateral reading in such a way as to add interest to the drier studies. At first the pupils should read under the teachers' recommendation; then, as they advance, more should be left to their own choice, and at last they will acquire the power of searching and rightly choosing for themselves what subjects to read and how to study them."

In cases where fiction is used to enliven study, Mr. Perkins was in favor of a thorough system of questioning, to make sure that the story has not been read to the entire forgetfulness of the lesson. The speaker then gave a list of historical works which may be used to advantage in the study of history, including many of Scott's works, Macaulay's lyrics, the tales of J. Fenimore Cooper, the biographies of Washington Irving, and, finally, the "Endymion" of Disraeli, which was characterized as brilliant. Other courses of reading were also mapped out, many suggestions of practical importance being noted.

The association then adjourned until 1:30 P. M.

AFTERNOON SESSION.

At the opening of the afternoon exercises, Miss Kate Kennedy, principal of the North Cosmopolitan Grammar School, read a paper entitled: "Needed

Reform in Education," the result of a year's observation of the different educational systems of Europe. An abstract of her paper has been given to the PACIFIC SCHOOL AND HOME JOURNAL for publication.

THE NECESSITY OF EDUCATIONAL REFORM.

After some remarks on the general development of education, and the growing demand in all civilized countries for a thorough and comprehensive system of popular instruction, she called attention to the increasing dissatisfaction with existing systems, now so prevalent both in this country and in Europe. In England, under the Result system, the interference of the state is reduced to a minimum. The government neither builds schools nor appoints teachers. It merely designates certain studies to be pursued and provides for an annual examination in those studies, bestowing a reward in money both on the successful schools and on the successful scholars. The system seems a liberal and comprehensive one, leaving the teacher free to exercise his judgment as to methods, and giving a certain scope to his individuality. And yet, during the few years of its operation, the evil effects are so manifest as to arouse the apprehension of the leading minds of the country.

They claim, that in the struggle to prepare for the examination, and the eagerness to secure prizes, the real work of mental development is lost sight of; the pupils are crammed, not instructed. Their health is impaired by keeping the nervous system in a state of perpetual tension, their individuality ignored, and the moral tone of both teachers and scholars very much lowered, because thoroughness and growth are disregarded in the effort to acquire a smattering of superficial knowledge sufficient to pass the examination.

The Hon. Auberon Herbert, in an essay on this subject, remarks: "In our ignorant and unreasoning belief in examinations, we have not perceived how fatal the system is to all original talent and strong personality in the teacher. It renders it impossible for him to treat his subjects of teaching from the point of view which is real and personal to himself, or to use his own methods of influencing his pupils. He is forced to subdue his strongest tastes and feelings, and recast and remodel himself until he is a sufficiently humble copy of the examination on whose verdict his success depends. Any better plan to reduce managers, teachers and pupils to one level of commonplace stupidity, could scarcely be devised."

The Prussian system, so much lauded and so extensively copied, is in Germany not regarded with unmixed satisfaction. It is looked upon by the liberals with increasing distrust. They claim that in spite of its careful physical and mental training, it produces but a one-sided development, totally neglecting the cultivation of the higher principles that produce a noble, manly and independent race of men. They say that it tends to degrade the individual to the condition of a machine, and fear that such training, coupled with their wonderfully organized military system, may prove as fatal to popular liberty as the densest ignorance could do. In Germany, as well as in other countries of Europe where freedom of speech is not specially encouraged, the opposition to government systems of education is shown in the establishment of schools supported by voluntary contributions, in which scientific and improved methods of instruction are practiced. One of the most celebrated and successful of these is the Model School of the Educational Society at Brussels. This school was established for the purpose of introducing natural methods of education, in the most thorough and complete manner. It occupies a large building, inclosing on three sides a court, partly roofed with glass, which is used as a hall for calisthenics, marching, and singing, and as a play-room in bad weather. There are two spacious play-grounds, one of which is surrounded by a wide border, in

which are planted twenty-five different species of trees, besides a variety of other plants used in botanical instruction. The building contains a large gymnasium; a music hall, so arranged that it is also used for projected illustrations; a museum, containing objects for illustrating natural history, agriculture, woods, minerals, etc.; a physical and a chemical laboratory; with a hall for drawing, furnished with a fine collection of models from the antique.

As the first essential of education is to secure a sound body, great attention is bestowed on the health, comfort, and physical development of the pupils. The class-rooms are large and airy, and the number of pupils in a class limited to thirty-three. The desks are movable, each one is numbered according to size, and every scholar is measured twice a year that he may have a desk exactly suited to him. Each lesson lasts three-quarters of an hour, and is followed by a recess of fifteen minutes, when all scholars are dismissed to the yards or play-room. The physical exercises are directed by a trained gymnast, and special exercises are prescribed by an experienced physician for pupils whose health requires them.

In the education of the intellect, great care is taken to follow the natural development of the faculties. All abstractions are sedulously avoided until the mind is in a condition to grasp them, and the pupil has been furnished with a good stock of ideas derived from an intimate acquaintance with and a trained observation of natural objects. So careful are they in this respect, that the pupils are never required to learn a *name* until they have seen the *object* which it represents; it being a maxim of the school that "*The names of things which have not been seen are a burden too heavy for a child, too light for science, and utterly useless for culture.*" In the one case where it is necessary to become acquainted with abstract forms—viz., in learning to read—the exercise is made as agreeable as possible, and the pupils are not troubled with *spelling lessons*, for it is believed that they will gradually learn the orthography of words as they become familiar with their significance and use.

Zoölogy, botany, geometry, mechanics, and drawing are begun in the lowest classes of the school; while grammar, geography, and history are deferred until the judgment is sufficiently developed to appreciate them. Botany is taught from the plants in the garden, which are arranged in classes for that purpose. In a lesson in zoölogy, the animal under consideration and a skeleton of it are placed before the class, and the pupils learn the names and uses of each bone and organ. They learn the mechanical powers by studying simple machines—taking them to pieces, and putting them together again. Every class makes an excursion once a week, with some definite object in view; as, for example, to a zoölogical or botanical garden, to a picture gallery; or to the country for a lesson in geography, geology, or topography—to visit some place of historic interest, or sketch a noted scene or object.

As the judgment is the ruling faculty of the mind, the culture of all the other faculties is made to conduce to its development; the teachers are required to keep this end constantly in view, and the value of their work is estimated not by the number of things which the scholars *appear* to know, but by the correctness of their judgment.

As a means of moral culture, set lessons are deemed useless, since morality consists more in habit than in maxims; but great care is taken to inculcate habits of order in work, play, dress, etc.; to secure promptness in attendance and obedience, and to avoid everything that tends to pervert the moral sense. The teachers are required to explain the motive for each order, that the pupils may learn to discriminate between a legitimate and an arbitrary command. They are specially enjoined to inspire in their pupils a horror of lying, and to inculcate the social virtues, such as courage, justice, and devotion to the public good. They are required to represent labor as the source of all *good*, and method and order as essential conditions of success; to excite the

enthusiasm of the more advanced scholars for the general progress of humanity; to illustrate the social consequences of great inventions and reforms; to show how material prosperity depends on *good morals* and the observance of *justice*, and how morality and justice depend directly on the perception of *truth*—that is, on intelligence.

The schools of the Educational Society are every day growing in popular favor. The superiority of their work is evident, and this fact, coupled with the influence of the society, has led to the introduction of reforms in the public schools of Belgium, which entitle them to rank among the best in the world. In Paris there are several excellent schools where the pupils receive special training for various trades and professions; but the model school at Brussels aims to develop *all* the faculties of body and mind. The hand is trained simultaneously with the intellect, so that a pupil of this school on arriving at maturity would be capable, not only of deciding the calling for which he was suited, but of achieving success in it.

The most prominent effort at radical reform in education in this country occurred at Quincy, Mass. Five or six years ago this town had the good fortune to secure a school board whose members possessed more leisure and intelligence than usually falls to the lot of school directors. They took the trouble to visit the schools, and to examine the scholars. Their questions disclosed the fact that the instruction imparted was superficial in the extreme. An inquiry into the cause of this superficiality led to the conclusion that it is safer to trust the experience and tact of good teachers than the most elaborate course of study. They therefore appointed as superintendent a man capable of distinguishing between a *good teacher* and a successful *drill-master*, (a faculty not so common as people imagine) and giving him full power to act. He set aside the existing system, and introduced natural methods. He appointed good teachers, and removed the incompetent; he infused new life and earnestness into the schools, and the result was so satisfactory, that before long Quincy became a sort of educational Mecca to which enthusiastic teachers flocked from every quarter to acquire wisdom and find inspiration. Unfortunately the permanence of this gratifying reform is far from assured. Charles Francis Adams Jr., in his article, "Scientific Common-school Education," refers to this fact, and points out some of the obstacles that militate against the success of the movement: as, for example, the lack of trained teachers to replace those who retire; the tendency of teachers trained to the old system to lapse insensibly into the old and familiar methods; the fact, that when pupils move away and go to other schools they are judged by the systems of those schools, and are usually put back two or three grades; for though they have very clear ideas on a variety of subjects, which they express readily both in speaking and writing, they are looked upon as backward and ill-taught, because *they cannot parse, they do not know a neuter verb when they see one, and are deplorably ignorant of formulas*; so, as Mr. Adams expresses it, "the tendency is ever backward into the old and well-worn ruts, and must so continue as long as the movement is an isolated one."

Mr. Adams in this article shows the general and urgent need of reform in our school system, and points out the causes which led to it. He gives an interesting account of the development of school superintendency, and refers to the remarkable talent for organization which our people possess. He shows how this talent has been manifested in connection with our educational system; the good it has effected by providing commodious and well-ventilated buildings, securing order and cleanliness, etc., and also the injury it has done by a mistaken effort to secure *mental development* by *mechanical regulations*. "Our schools," he says, "are huge mechanical educational machines, peculiar to our own time and country, and are organized as nearly as possible as a combination of the cotton-mill and the railroad, with the model state-prison. The school

committee is the board of directors, while the superintendent, (the chief executive officer) sits in his office, with the time-table, which he calls a programme, before him, by which one hour twice a week is allotted to this study, and half an hour three times a week to that, and twenty hours a term to a third; and at such a time one class will be at *this point*, and the other class at *that*, the whole moving with military precision to a given destination, at a specified date. Mechanical methods could not be carried further. The organization is perfect. The machine works almost with the precision of clock-work. It is, however, company-front all the time. From one point of view children are regarded as automaton; from another, as india-rubber bags; from a third, as so much raw material. They must move in step, and exactly alike. They must receive the same amount of nutriment, in equal quantities, and at fixed times. Its assimilation is wholly immaterial, but the motions must be gone through with. Finally, as raw material, they are emptied in at the primaries, and marched out at the grammar grades, and it is well."

Many of our people would feel indignant at the idea that this description could have the remotest application to the schools of San Francisco. They assert that only the enemies of our public schools find any cause of dissatisfaction, and they seem to consider it a species of treason, even to *hint* at imperfections. This is not only wrong, but absurd. For, though our schools are among the best, they are still susceptible of improvement, and *must* be improved if they are to hold the high place they have won in the popular estimation. It is idle to deny that *our* schools are suffering from the same mechanical organization which leading educators in the East are seeking to reform. Here, as there, we are hampered by a course of study where so much is attempted that nothing can be thoroughly accomplished. The children are taught in large classes, where individuality is of necessity ignored—pupils of the most varied character and capacity being expected to develop exactly alike, and to achieve the same result in precisely the same time. Our work is estimated by a system of examinations, in which routine drill and systematic cram must always appear to greater advantage than real intellectual development. The natural outcome of this is superficiality. The pupils work for credits, and lose sight of true progress. The little prattlers in the lowest primary classes talk percentage, and learn to look upon credits as the object of all school work—the infallible standard by which both teachers and pupils are judged. The indolent and the dull are tempted to resort to trickery and deceit to secure those all-important credits; while the conscientious high-mettled children, whose honor is above proof, rob themselves of needful rest, and, in the useless effort of memorizing what they do not understand, so overstrain the nervous system, that they are likely to fall a prey to any illness that happens to find them in such depressed condition, or to drag through life mental and physical shadows of what they might have been. It is hardly an exaggeration to say that three-fourths of our teachers are constantly preparing their pupils for examination instead of educating them, and the remaining one-fourth are reluctantly obliged to surrender their better judgment, and follow in the same track, lest their classes should fall below the standard, and they, the teachers, be stigmatized as failures.

Leading educators in all parts of the country are earnestly striving to counteract this tendency, but as the whole system has, for some time, been moving in that direction with ever-increasing velocity, it is now no easy task to resist its momentum. A formidable obstacle to improvement is the connection of our public schools with politics. It is as fatal to progress as the union of church and state, and as we know that politicians cling to patronage like the shirt of Nessus, it will be difficult indeed to sever the bond that unites them. There is abundant opportunity to observe the injurious effects of many of our powerful

organizations. The gigantic monopolies which trample on the rights of the people; the rings in every department of government, by means of which supremacy is secured and personal greed satisfied at the expense of good government and the sacrifice of principle; the machine system in politics, whereby the selfish and corrupt hold supreme control, leaving to the honest and patriotic citizen no alternative, but to vote for the less objectionable among the corrupt or partizan candidates presented for his selection—prove conclusively that this talent for organization which our people possess in such an eminent degree may be made as potent for evil as for good. It is the natural tendency of all institutions to lose, in the course of their development, that plasticity which enables them to conform to the gradual growth of the community—to become rigid and inelastic and finally to oppose a barrier to progress which is strong in proportion as the organization is perfect. It required a long and bloody revolution to overthrow the old French regime and restore the manhood of France; and the once powerful nations of India and Egypt were crushed beneath the weight of their oppressive class systems, while barbaric races, among whom individuality had a chance to develop, swept past them in the march of civilization. Fortunately our educational system is still plastic enough for the introduction of needed improvements. Once emancipated from political patronage, it would be easy to effect them, if the earnest and capable teachers would take the initiative and point the way. If the result of public school education is unsatisfactory, it is because it is still governed by an arbitrary or fashionable instead of a practical standard. Although we talk much of the dignity of labor, there is nothing done to develop and sustain it. Our course of instruction is mainly literary. We do nothing whatever for the training of that most essential of all mechanical implements, the human hand, until, through a long period of enforced idleness, it loses its natural dexterity to such a degree, that the very children of our artisans have neither taste nor aptitude for mechanical pursuits. Herbert Spencer, in his *Treatise on Education*, clearly indicates the course which reforms must take in order to have a practical bearing on the purposes of life. "How to live," he says, "that is the essential question for us. Not how to live in the mere material sense only, but in its widest sense. The general problem which comprehends every special problem is the right ruling of conduct in all directions, under all circumstances. In what way to treat the body; in what way to treat the mind; in what way to manage our affairs; in what way to bring up a family; in what way to behave as a citizen; in what way to utilize all those sources of happiness which nature supplies; how to use all our faculties to the greatest advantage of ourselves and others; how to live completely. And this being the great thing needful for us to learn, is, by consequence, the great thing which *education* has to teach, and the only true way to judge of any educational system, is to judge in what degree it discharges such functions."

He classifies the activities that constitute human life, and shows conclusively that the training which will best fit the individual to preserve his health, to support himself, to derive the largest amount of happiness from life, to perform in the best manner the duties of parent and citizen, is the scientific training; and that even in the cultivation of the accomplishments which rank last in the point of importance, science is still essential. The book should be familiar to every teacher and to every parent also, for it is full of valuable hints for the management and moral training of children, which if put in practice, would prevent an incalculable amount of domestic wrangling and misery.

Although the advocates of educational reform are unanimous in the opinion that it must tend in the direction of scientific study, their suggestions as to the mode of introducing it are somewhat varied. Mr. Adams thinks it can best be effected by a more intelligent system of superintendence, and urges the establishment of a post graduate course in our universities, where the study of psychology may be pursued in its practical connection with teaching. This would

supply a class of liberally educated men (and women?) capable of broad and enlightened views on education, who would be ready to fill the position of school directors and superintendents, if our political system will admit of it.

Mr. Herbert believes the reform would be best promoted by arousing the interest of parents and throwing the responsibility directly upon them; while Prof. Silvanus Thompson, a gentleman who has given great attention to the subject of industrial education, recommends that certain technical and scientific studies be substituted for the literary branches now required, and that these be postponed to a later period, when the mind of the pupil would be better suited to receive them. In many counsels there is wisdom; so perhaps the combination of all these methods with a thorough course of true kindergarten training, as a foundation for the superstructure, and a system of normal schools where teachers could be fully instructed both in the *science* and in the *art* of teaching, might achieve the desired result.

Mr. S. D. Waterman of Stockton followed with a paper upon the "The Duties of Teachers." He said:

"I desire to call your attention to the duty of the teacher toward the pupil, with regard to the acquisition of these four things: A taste for pure and wholesome reading; a love of country; self-control; habits of neatness. In each of these, as in everything else, example is more than precept, and example should either precede or accompany precept, never come after it. The pupils naturally look to the teacher as a model of propriety, and it is within the power of every teacher to use his or her influence that the best results may follow. In regard to the first duty mentioned, a carefully prepared course of reading should be entered upon, and completed each year, in order to counteract the influence exerted by the vile and pernicious literature which so abounds in the present day. It is also essential that boys be trained in such a manner that they may become good citizens—lovers of their country, so that the interests of the State may be safely intrusted to them in the future. Closely connected with this duty was the necessity of teaching the scholar self-control. If pupils learn early to control themselves, and to become subject to law because it is law, the State will very seldom have to deal with them with law. The person who in youth learns to control his appetites, passions, and desires, has learned one of the lessons that will be most useful to him in after life."

Prof. G. W. Minns then gave some humorous reminiscences of early times in California, having special reference to the establishment of the public schools.

President Norton then made some remarks about Mark Twain's little Jim and James in connection with the election of Mr. James Denman as president of the Teachers' Association of California. He then introduced that gentleman to the association in a very pleasing manner. Upon taking the chair Mr. Denman made the usual appropriate remarks, and business proceeded.

The Committee on Resolutions presented the following, which were unanimously adopted:

Resolved, That the State Teachers' Association of California respectfully request the State Legislature to fix the salaries of county superintendents at such a figure as may enable them to devote their whole time to that frequent personal supervision of schools so urgently necessary to secure the highest efficiency and economy.

Resolved, That we impress upon teachers and citizens the prime necessity in every community of electing persons of highest character and capacity to

act as school teachers and members of boards of education; that in large cities members of boards of education should be appointed rather than elected.

Resolved, That we earnestly renew the resolutions of last year calling for the establishment of a chair of the science and art of teaching in the State University of California.

Resolved, That the association tender its thanks to those who have so instructively addressed it.

Resolved, That the Teachers' Association of California tenders its hearty thanks to the Board of Education, and to Superintendent Taylor of San Francisco, to the proprietor of the Palace Hotel, and to the Central Pacific and Southern Pacific Railroad Companies for courtesies rendered.

The association then adjourned until 8 p. m., at Dashaway Hall, when John Muir, the Humboldt of the Sierras, delivered a very interesting lecture upon "Alaska and its Glaciers." This closed the session of 1880.

CHAS. H. HAM, Secretary.

LIST OF MEMBERS PRESENT AT SESSION, 1880.

S. M. Augustine,	Miss Mary Grant,	G. C. Richards,
C. H. Allen,	J. B. Hickman,	John Swett,
Miss E. B. Barnes,	G. P. Hartley,	E. R. Sill,
Rev. C. M. Blake,	W. H. Hobbs,	C. H. Sykes,
Geo. Brown,	Chas. H. Ham,	E. P. Smith,
O. E. Badgeley,	J. W. Hinton,	A. W. Sutphen,
L. E. Blockman,	A. F. Hills,	Miss H. E. Stone,
B. L. Brown,	W. R. Hussey,	Miss M. G. Stone,
S. F. Black,	Miss Emma Hopyard,	Miss M. Stone,
W. S. Babcock,	O. T. Harvey,	Miss W. I. Shaw,
J. E. S. Bell,	E. Knowlton,	J. L. Shearer,
A. A. Bailey,	Miss K. Kennedy,	S. Sturgis,
H. T. Batchelder,	Miss Mary Kelley,	H. A. Saxe,
L. L. Brown,	Richard Kane,	Mrs. C. W. Sullivan,
Mrs. L. Booth,	Gano Kennedy,	Mrs. M. H. Swift,
Miss M. Batten,	J. Keep,	Theo. S. Shaw,
Wm. Crowhurst,	Miss Martha Knapp,	T. A. Sweeny,
L. Cummings,	Albert Lyser,	Rev. C. C. Stratton,
Mrs. A. G. W. Conlan,	Miss Annie Loucks,	J. W. Symmes,
Miss N. E. Curtis	Miss M. A. L. Madden,	C. B. Towle,
Miss Emma Cearley,	C. W. Moores,	J. N. Thompson,
Miss K. Cozzens,	J. T. McDonald,	M. L. Templeton,
L. J. Chipman,	J. T. Murnan,	H. J. Todd,
Mrs. M. J. Carusi,	Peter McHugh,	Miss C. A. Templeton,
F. M. Campbell,	S. P. Meads,	Miss L. S. Templeton,
Mrs. K. A. Campbell,	J. B. McChesney,	W. S. Taylor,
Miss Flora Conover,	E. L. Moore,	G. E. Thurmond,
C. W. Childs,	A. L. Mann,	Miss M. J. Titus,
Miss R. G. Campbell,	Mrs. A. L. Mann,	Miss A. Vogel,

A. F. Craven,	Miss L. L. Moon,	T. B. White,
Miss Louise A. Carter,	Miss Addie Murray,	S. B. Waterman,
Mrs. A. E. Du Bois,	Mrs. A. W. Moulton,	F. L. Wallace,
Jas. Denman,	A. H. McDonald,	J. T. Wickes,
W. D. Egenhoff,	Mrs. A. H. McDonald,	W. J. G. Williams,
Miss E. S. Fitts,	Miss Sue D. Moore,	Mrs. H. E. Wise,
Wm. Foss,	Geo. W. Minns,	J. S. Wixson,
Mrs. K. B. Fisher,	Miss Kate Mitchell,	S. A. White,
Miss Jennie Fischer,	H. B. Norton,	Miss C. K. Wittenmeyer,
A. L. Fuller,	J. Newcomer,	Miss N. Flotilla Watson,
D. T. Fowler,	W. A. Newcum,	Miss Jessie Wood,
W. W. Frazier,	Miss Norton,	Miss Helen Wright,
J. W. Goin,	A. W. Oliver,	Mrs. A. P. Wright,
J. C. Gilson,	A. L. Pratt,	Miss L. M. Washburn,
M. H. Galusha,	G. M. Parks,	M. Yaeger,
Mrs. A. Griffith,	Miss H. M. Porter,	C. S. Young.
R. Y. Glidden,	J. Scott Ryder,	

“THE CHILDREN LAUGHED AND SANG.”

It was in the chill December
That the Angel of Death came by,
And he rustled his wings of darkness
As he swept through the wintry sky:
A household of happy creatures
Dwelt quiet and free from care,
And the angel stole in softly,
And stood all silent there.
(But the children laughed and sang at their
play;
Never a fear nor a pang had they.)

And the angel swiftly in silence
Struck home the mortal blow,
And in the wintry morning
He laid the father low:
And wildly the sorrowful mother,
Bewildered and stunned with woe,
Wailed in her lone bereavement,
And wished that she too might go.
(But the children laughed and sang at their
play;
Never a fear nor a pang had they.)

Cold in the lonely chamber
Lay the father's form at rest;
And they laid the delicate flower-wreaths
Upon his quiet breast;
And forth from his home they bore him,
And hid him from sound and sight;

And they heaped the cold earth above him
While the children's feet trod light.
(But the boys went home to their happy play;
Never a fear nor a pang had they.)

And often the childish footsteps
Are turned to their father's grave,
Where the grass with its glistening hoar-
frost,
Lies over that heart so brave;
And sometimes they watch their mother
Bending in sorrow and pain;
And they say in their childish voices:
“Will papa never come again?”
(But soon they laugh and sing at their play;
Never a fear nor a pang have they.)

So God in his infinite pity
Shuts the eyes of the children dear,
And they see not the fell destroyer,
Though their eyes are so bright and
clear.
And I said: “There's no past for the
children
With its terrible pangs and stings;
And for them no brooding future
Spreadeth its threatening wings.
All they see is the present—to-day;
And so they laugh and sing at their play.”

J. H., in Chambers' Journal.

THE C. L. S. C.

This department is under the editorial charge of MISS L. M. WASHBURN, San Jose, to whom all communications relating thereto must be addressed.

OUR C. L. S. C.'S STUDY.

IN the March JOURNAL the members of the C. L. S. C. were given an opportunity to enjoy one of the pleasant essays lately read before the circle at San José. A general report of work done in the same circle since October will be the more intelligible for having thus presented one paper in full.

The same plan has been pursued as during last year. Neighborhood classes carry on recitation and discussion, most of them meeting weekly for the purpose. There has been much faithful reading by these little bands; much social pleasure of a high order in the lively conversation elicited. Special enthusiasm was aroused by the study of Roman History. Condensed histories, like Merivale's, are never easy to read, yet our author brings out well the strong lights and shadows of that wonderful empire. Almost every member of our Circle found time for more or less reference to other historians, and very sharply were their views debated in our informal talks. Arnold's and Gibbon's great works were perhaps our richest mines. Dr. Arnold's masterly history of the growth of Roman citizenship, his vivid portrayal of Hannibal's career and character, and the life-struggle of Rome during the second Punic War, made the untimely ending of his history seem an unretrieved loss. Could that manly interpreter of a strong nation have lived to tell the story of those later days, which were his chosen theme, how would he have pictured the struggle of the civil wars, and analyzed the forces that built up and those that destroyed the empire! But it is chiefly when trying in vain to trace in Gibbon's pages the development of a nobler kingdom within the old empire, that we long for the work Arnold hoped to accomplish. How would his higher spirit have illuminated that great period!

Besides dipping into these great works and whatever other standard histories were available, and diligently consulting our classical maps, dictionaries, and cyclopedias, down came the stores from the garrets. Plutarch's perennial tales must be brought face to face with modern critical research. The old school editions of Cicero, Cæsar, Virgil, Sallust, shook the dust from their covers, and our rusty Latin fairly creaked as we tried to turn it in the once familiar locks. But the public libraries furnished translations to which we gratefully resorted, glad that if the finer shades of meaning can be appreciated only by masters of the original language, yet the general thought of those great men of antiquity is brought fairly within our reach by English versions. The interpretation of great authors depends even more upon experience of life than upon technical mastery of language—a comfort to those who cannot be lin-

guists. So we obtained a clearer idea of Cicero's character and career than any of us had had in school days, when his orations were on our lips; and Cæsar's Commentaries on his own Gallic campaigns were read, not like a Latin exercise book, but like Sherman's Memoirs of his March to the Sea. Members of our circle chose different characters for special notice. There was the warm admirer of Cæsar, whose zealous championship provoked us to laughing attacks upon her hero. There was Cato's ostensible defender, who more and more lost faith in that much-lauded model of old Roman virtue.

Few of us had time for extended research, but we all enjoyed that constant meeting with our subject in general reading, which is one of the pleasures in the pursuit of any line of study. Especially is this the case with the history of Rome, which seems bound up with the whole life of the world. Besides the allusions in standard authors, the references in newspaper and magazine seemed almost as numerous. And we were always happening on special historical articles. For instance, many probably noticed in *Harper's Weekly*, during our last Presidential campaign, an interesting description, by Eugene Lawrence, of "An Election Day in Ancient Rome." On the evening of the eventful November day that decided the struggle, while returns were coming in at every telegraph office, our little circle could not settle down for its ordinary recitation, but it listened with a keenness of interest possible on no other occasion to this account of the impressive ceremony of an election so like and so unlike our own in the great republic of the past, only excelled, so far in the world's history, by our own greater republic. Illustrated papers and magazines, too, every now and then presented us with pictures, now of a recently excavated Roman villa, again of the imperial city itself. Did we turn to the handy volume series published by Appleton or Harper, or to the cheap editions of famous books now furnished by various publishers, again we found treasures ready to our hand. To name two or three of these for C. L. S. C. members who have not happened to find them: Few larger treatises on Roman antiquities can be more helpful than the little volume on that subject published among the Appleton History Primers. Tiny as the volume is, and costing as little, it yet makes us more at home in the Roman house, or street, or forum, than many a more pretentious work. So, among I. K. Funk's fifteen-cent reprints are to be found, in the best English translation, the famed "Meditations of the Emperor Marcus Aurelius." And how that noble emperor, philosopher, and pagan saint admits us to his heart in these broken jottings from his journal! As Hawthorne says, speaking of the bronze equestrian statue of Marcus Aurelius which crowns the Capitol Hill of Rome, "It is the most majestic representation of the kingly character that the world has seen. A sight of the old heathen emperor is enough to create an evanescent sentiment of loyalty even in a democratic bosom, so august does he look, so fit to rule, so worthy of man's profoundest homage and obedience, so inevitably attractive of his love." And right here let us remind the C. L. S. C. members, that for the spirit of the imperial city in its ruins, perhaps no one volume can be found—not even Corinne—so suggestive as Hawthorne's "Marble Faun."

One help from our outside reading came so opportunely that it must be

mentioned. In the "International System of Bible Lessons," which most of us were pursuing in connection with the Sunday-schools, the theme of the Coming of Christ was studied just as we were reading of the same period in our Roman history. Our lesson papers were full of allusions and explanations; and especially in such scholarly christian histories as those of Dean Stanley, Dr. Geikie, and Conybeare, and Howson, we found some of the most vivid portraiture of the empire in the time of Augustus. So, the sacred and the secular history illustrated each other, as they always will when studied together.

And thus our little neighborhood circles went on for some four months, p olonging the allotted time enough to allow a little of this outside reading for even the busiest of our number. As we closed our Merivale the last evening before turning to a new subject, one among us said, with a sigh, "It's like reading a novel in which the hero dies"; and so we all felt as Rome fell before the Goth.

Meanwhile, the topics presented at the monthly meetings of our general circles will show our chief interests. Our opening meeting was only preparatory; its chief feature an address, by Prof. Norton, on the special need in California of such an association as the C. L. S. C. A report of the Monterey Assembly, and plans for the coming year's work in San José, filled the rest of evening. Our new subject was opened at the next meeting by a description of the general appearance of Rome, given by one of our number who had visited it, and who had some remarkably fine photographs of its chief ruins. At this and the next two meetings we heard readings of some of Macaulay's "Lays of Ancient Rome"—"Horatius" and "Virgilius." Prof. Martin explained to us the English, Continental, and so-called "Latin" modes of Latin pronunciation. An essay on the "Poets of Rome" was followed by the singing of Mrs. Hemans' lyric—

"Rome! Rome! Thon art no more
What thou hast been."

Perhaps most interesting of all was an account of Rome and its ruins by an architect who had made them a study. The remarkably fine map which our lecturer made the base of his clear descriptions was supplemented by original drawings and measurements, so that we gained an acquaintance with the city rare without actual sight. Our last full meeting, while on the same subject, gave us two especial treats, so attractive even in prospect as to crowd our audience-room. The first was an essay on "Roman Character," the second a lecture upon "Hannibal and the Second Punic War." With a vividness that only military experience could give, Prof. More sketched for us those marvelous campaigns, holding us almost breathless long past our usual hour for closing. Other lectures on Roman history were planned; but the time allotted to this part of our C. L. S. C. study was already past, and reluctantly we turned our reading into other channels. The charming essay by Mr. M. H. Field, published in last month's JOURNAL, was intended as a transition from Roman to early English history.

Space will not allow a detailed account of our work in the later subjects. From the fact that only one month instead of three was assigned to each, they

could hardly arouse the same degree of interest; still, both the Philosophy of the Plan of Salvation and the early English History had a peculiar attraction to us just after bringing up Roman history to the same epochs. Never had the gospel story seemed more beautiful or more strong than when we were fresh from the contemplation of the best the world could do without Christ. Never had the Kingdom of the Truth seemed so grand as in contrast to the Roman Empire. Early Britain, too, we liked to study, as a Roman province, while the dispossessed English were no less interesting from the force of contrast. The San José Circle was fortunate in securing representative citizens to address us on the themes of these three months. We had a leading minister of the gospel to discourse on the "Philosophy of the Plan of Salvation"; a well-known physician to lecture on hygiene when we were studying "How to Get Strong and How to Stay So," and the principal of the Normal School to discuss "Early English Literature." We are not going to turn away from this subject without an essay on Alfred, the greatest hero of his age. But we shall soon be ready to put ourselves under Prof. Norton's charge for the two months' study of Biology, which completes our C. L. S. C. reading for the second year.

It is hoped that this account may contain suggestions for C. L. S. Circles in other towns.

THE MONTEREY SUMMER ASSEMBLY.

The second annual assembly of the Chautauqua Literary and Scientific Circle will be held at Pacific Grove, near Monterey, from June 29th to July 13th, 1881.

Arrangements are so nearly complete that assurance may be given of a session even more pleasant and profitable than that of last year. Nearly all the lecturers of the first assembly will be present, and other speakers of note have consented to lend their assistance. Natural history, as before, will be the leading topic, on account of the unexampled facilities for studying the animal and vegetable life of the sea-coast. Other subjects, scientific, historical, and literary, will be selected with reference not only to the Chautauqua course of reading, but also to the resources of the Pacific Coast, and the general thought of the world.

The Southern Pacific Railroad Company, now the owners of Pacific Grove, have determined to erect a permanent building for the use of the Chautauqua Society. It will contain an audience-room for lectures, and two class-rooms, fitted with shelves and other arrangements for scientific collections. They have also decided to refurnish the cottages, and provide new tents and facilities for campers. Notwithstanding these improvements, the terms will be lower than in the past, as it is the desire of the company to encourage travel, rather than to make the grounds a source of profit. They

will also maintain the previous character of Pacific Grove, in respect to religious and moral regulations. No drinking, gambling, Sabbath desecration, or kindred practices will be allowed. The grounds are delightfully situated in a grove bordering upon the rocks of the Coast. Few such charming resorts for camping can be found, while board will be furnished to those who prefer.

The assembly, while held under the auspices of the C. L. S. C., is intended not only for members of that society, but for all persons interested in such a summer-school of science and literature, similar to those which have become so popular in the Eastern States.

Further announcement will be made in the next issue of the JOURNAL.

EDITORIAL DEPARTMENT.

THE FACTS.

IN California, the opposition to the public-school system is occasionally manifested by something further than pulpit lectures or newspaper articles. In the State Senate, the annual appropriation of \$1,511,000, or \$7 for each census child, was reduced to \$1,300,000, on the ground that the census returns are not reliable, and that there are not really 216,000 children of school age (between 5 and 17) in the State. This may be true, but the only argument given to prove it only displayed the ignorance of those senators who adduced it. It was claimed that, as about 50,000 children are shown by State Superintendent Campbell's report as not attending any school, or unaccounted for, they must necessarily be *non est*, and the census returns deceptive. If our sapient legislators, or those superior wiseacres who "run" the educational department of the daily metropolitan press, only knew a little about schools and school children, they could account easily enough for the fifty thousand absentees. First, while the "census age" begins at five, children below six are not admitted to school, at least, in all our large cities. Second, in the absense of a compulsory law, or any strong incentive, a decided proportion of parents, urged by avarice or necessity, keep their children at home to apply their labor for the general good. Third, the reports of other States show an equal or greater percentage of non-attendants; and the poorer the community the larger is this percentage. Fourth, the best test of the accuracy of the school census is the recent United States census. Experience shows that the ratio of children from five to seventeen, to adult, is about as 1:4.

These points commend themselves to the attention of those legislators and writers with whom economy is a plea, not a subterfuge.

BILLS SENT OUT.

A LARGE number of bills are sent out with this number of the JOURNAL. We trust our subscribers will oblige us by a prompt remittance.

FAIRLY MET.

NEVADA city, in this State, is evidently a progressive place. The town trustees recently made an appropriation for lighting the city with the electric light—the first city on the coast to make a general introduction of the Brush electric light.

A city that is so fond of light will surprise no one by her position on the school question. And so it is. An election was recently held in Nevada city for school trustee. One candidate avowed himself as opposed to the present system; declared himself a follower of a certain Mr. Zach. Montgomery, a rabid anti-public-school man. The vote was polled, and Mr. Montgomery's disciple had one hundred and ten out of six hundred. We think there is no mistake about the opinion of the citizens of Nevada city on the question of free, unsectarian schools.

It may not be amiss to mention here that the schools of that place are excellently conducted; that they are completely graded from the lowest primary classes to a fine high school of which Mr. S. A. Bulfinch is principal; Mr. N. Kennedy superintending the entire department. These facts account to some extent for the practical unanimity of the citizens.

THE STATE NORMAL SCHOOL.

IN spite of the disadvantages under which the Normal School has labored during the year just past, a highly successful session will, in a few weeks, come to an end. A year ago the magnificent school building, at that time the finest public-school structure in the Union, was destroyed, together with the greater part of the apparatus and library. During an entire year, with insufficient auxiliaries and cramped accommodations, the work of the school was highly efficient, and the graduating class is pronounced not inferior to any gone before. Too great credit cannot be given to principal Charles H. Allen and his faculty, for the condition of the school. We are pleased in this connection to note that, by a special resolution of the San Francisco Board of Education, Prof. Allen will deliver the address to the graduates of the normal department of the Girls' High School of this city, on the 20th inst.

In our next issue we hope to publish a history of the State Normal School since its foundation, in 1861.

FROM ACROSS THE WATER.

IN a recent number of the *London School Board Chronicle*, we see a full and very laudatory review of Mr. Swett's "Methods of Teaching." The book has been republished in England by Sampson Low & Co. (making this its sixth edition.)

The review notes the various points treated of in the work, and has words of commendation for each and all. It finally recommends it to the study of all ambitious teachers. In this suggestion we concur.

We believe this one of those rare works, which, on the teacher's desk, will always be in use, and never fail to help the current of mental training down into the right channel.

THE BRANCH NORMAL SCHOOL.

THE law providing for a branch Normal School at Los Angeles was passed by the Legislature early in March, and received the Governor's signature. The last week in that month, the full Board of Normal Trustees went to Los Angeles, and examined the different sites offered for the location of the school. After a thorough inspection, a beautiful knoll centrally situated in the city, and known as "Bellevue Terrace," was chosen. There was a mortgage of \$8,000 on this property, which has been paid off by a voluntary subscription of citizens of Los Angeles.

The bill passed by the Legislature includes an appropriation of \$50,000 for a building, and the general appropriation bill gives \$7,500 a year for the support of the school. So, within a year, we may expect a branch normal school in full operation in the chief city of semi-tropical California.

EXAMINATIONS AND PROMOTIONS.

IN the city of Sacramento the plan of promotions suggested in the JOURNAL for February has been adopted, with one important modification. All examinations are done away with, and pupils are promoted from class to class solely on the recommendation of the teacher. The system is commended by the *Sacramento Record-Union*, which says, that at all events it will avoid the periodical season of unhealthy and prostrating excitement to which the examination system subjects our school children. On our part, we have no doubt that, with close and efficient supervision of teachers and their methods, this plan will produce better results in every direction than the present system of written examinations.

THE PROCEEDINGS OF THE STATE ASSOCIATION OF TEACHERS.

OUR readers will see in this number of the JOURNAL, a full account of the proceedings of the State Teachers' Association, recently held in this city. We regret that this report was not ready for publication two months ago. Had we anticipated such delay, other arrangements for procuring a full synopsis would have been effected. However, to a great majority of our readers, the addresses, etc., will have the same novelty as if published two months ago.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

A typographical error which occurred in section 1621, as published in this department among the amendments to the School Law, has been the cause of a great deal of correspondence, and no end of explanations. The error consisted in the misplacing of the word "not," and had the effect of making the section read directly the reverse of what it should express. The section as adopted by the Legislature is as follows:

"Section 1621. The boards of trustees and city boards of education must use the school moneys received from the State and county apportionments exclusively for the support of schools for that school year, until at least an eight months' school has been maintained; if, at the end of any year during which an eight months' school has been maintained, there is an unexpended balance, it may be used for the payment of claims against the district outstanding, or it may be used for the year succeeding. Any balance remaining on hand at the end of any school year in which school has not been maintained eight months, shall be reapportioned by the Superintendent of Schools as other moneys are apportioned."

The special attention of school officers is called to changes in the school law in respect to:

1. The time for electing Trustees (see section 1593).
2. The time for appointing School Census Marshals (see section 1617, subdivision 16).
3. The time for taking the census and reporting the result (see section 1634).
4. Additional powers of the superintendent to secure correct census reports (see section 1636).
5. Additional information required as shown on new census blanks (*do not use any of the old blanks*).
6. The necessity of maintaining an eight months school when there is sufficient State and county money (see section 1621).
7. Refunding any moneys collected by special tax when the same has not been used within one year from the time of collection (see section 1830).
8. Issuing bonds for building school-houses, etc. (see new sections 1880 to 1888, inclusive).
9. Apportionment of State and county school moneys (see Section 1858).
10. Itemized bills to accompany Trustees' orders upon County Superintendents, except for teachers' salaries (see section 1543, subdivision 3).
11. Trustees' orders for teachers' salaries, specifying name of months and monthly salary, etc. (see section 1543, subdivision 3).
12. Books furnished indigent pupils remaining the property of the district (see section 1617, subdivision 13).
13. Powers and duties of City Boards of Examination (see sections 1787 to 1794, inclusive).
14. Tenure of office of teachers in city schools (see section 1793).

Also to changes in blanks for making Teacher's Reports and Trustees' Reports, and to a new blank for Principals' Reports for schools in which more teachers than one are employed.

All amendments to the law took effect from and after the approval of the bill embodying them, viz: March 4th, 1881.

Sheets containing the amendments in convenient form for cutting out and pasting in the bound copies of the school law, can be had on application to county superintendents, or they will be sent from this office.

CONCERNING CHANGES OF TEXT-BOOKS.

The following correspondence from among several letters received and answered, is reproduced as substantially covering the ground of all, and as a matter of great interest:

April 21st, 1881.

HON. F. M. CAMPBELL, *State Superintendent of Public Instruction*:

DEAR SIR—Allow me to call your attention to the clause in the School Law which requires boards of education to “immediately upon their publication” file copies of newspapers, containing advertisements inviting proposals for changes of text-books, in your office. I wish to inquire:

1. If such advertisements are not filed in your office prior to the time specified for the opening of bids, has the board of education, under those circumstances, any authority to change books, and would any such change, if made, be legal?

2. In case the advertisement is filed, but not until after the lapse of more than a reasonable time for a copy of the first issue of the advertisement to reach you, is a change of books legal if made by the board. Yours truly, ———.

SACRAMENTO, Cal., May 5th, 1881.

DEAR SIR—I have refrained from answering your communication of the 21st ult., hoping to be able to give you the opinion of the Attorney-General upon the questions submitted. In view, however, of his continued absence on official business, and the multitude of important cases waiting to claim his attention when he shall return, my own views are given in reply to your questions as follows:

1. The third subdivision of section 1874 requires that before any change of text-books shall be made, the notice to be published shall be transmitted to and be filed by the secretary of the State Board of Education. It is to be presumed that the Legislature at the time of the passage of this provision understood that there was some object to be attained by inserting it in the law. What that object was it is not for me to inquire; it is sufficient that the Legislature has thus written the law, and a compliance with it is, in my judgment, as essential as is a compliance with any other legislative declaration. The local officers in any instance having failed to pursue this provision, their proceedings are illegal, and not in compliance with the mandates of law. Such an omission is a clear failure of official duty, and if permitted would have the effect of entirely defeating the object which the Legislature had in view in the passage of this provision of the law. It is a well-known rule of construction that officers in the performance of statutory duties are required to strictly follow those provisions which specify the manner in which they shall obtain jurisdiction to do a particular act, and any failure in this respect vitiates the entire proceedings.

2. While the question as to what constitutes a reasonable time in which to file a copy of the advertisements, is one largely within the discretion of the board, still, in any case where the delay was such as to defeat the provision, the courts

would undoubtedly review the action of the board, and would probably set aside the proceedings.

Yours truly,

FRED. M. CAMPBELL,
Superintendent of Public Instruction.

STATE BOARD OF EDUCATION.

Saturday, the 23rd day of April, was the time appointed for a meeting of the State Board of Education. It was an occasion long to be remembered for the entire unanimity of sentiment which prevailed, and the sweet and delightful spirit of harmony which reigned throughout. This was the more marked as it was in such striking contrast with the condition of things in the Legislature, which latter body was in session at the time in another part of the same building, engaged in a bitter contest over the question as to whether the amount of the State tax for school purposes should be \$1,511,846, or \$1,200,000.

Unfortunately however, no business could be transacted by the board, for the simple reason that no quorum appearing, the Superintendent was finally obliged to make a motion to adjourn himself, which, without discussion, he unanimously carried.

Another meeting of the board has been called for Saturday, May 21st, 1881.

The item in the tax levy bill for the support of public schools has provoked a great deal of discussion in the Legislature, and the Senate and Assembly are at a "dead lock" upon it. The bill as originally reported to the Assembly called for \$1,200,000. The amount was increased by the Assembly to \$1,511,846.

It was decided by the Assembly that the Legislature was obliged to raise the amount, in accordance with section 443 of the Political Code. This section was added to the code March 28th, 1874, and is unrepealed. It reads as follows:

"Section 443. The State Controller must between the tenth day of August and the first day of September of each year estimate the amount necessary to raise the sum of seven dollars for each census child between the ages of five and seventeen years in this State, which shall be the amount to be raised by ad valorem tax, for school purposes during the year, which amount the Controller shall immediately certify to the State Board of Equalization."

The number of census children in the State, as per the census taken in June last, was 215,978, which, at \$7 per capita, gives the \$1,511,846.

The Senate amended the bill, reducing the amount to \$1,300,000. A conference committee of three members was appointed from each house, which failed to agree; the Assembly by a vote of 44 to 22 refused to concur in the Senate amendment, and thus the matter stands at the present writing.

During the discussion, the Superintendent of Public Instruction was variously quoted as having said that the department could get along on the smallest amount named; that it was all that was needed, etc. I have not deemed this personal matter as of sufficient general importance to make any public statement concerning it, though it has very generally gone the rounds of the press. To my associate officers and teachers in the school department, however, it may be of enough interest to know exactly what were my views, and what my course was, to warrant the following brief statement. At all events I regard it of sufficient interest to

myself that they should know. On the 2nd of February, just before drafting the tax levy bill, Dr. May, Chairman of the Committee on Ways and Means, addressed me a communication, inquiring what the amount of the State tax was last year, and asking how much less we could get along with this year. To this communication I returned the following answer :

SACRAMENTO, February 3rd, 1881.

DR. W. B. MAY, Assembly Chamber:

DEAR SIR—In reply to your note of yesterday, would say that the Legislature of last year appropriated for the State school fund the sum of \$1,400,000.

That sum gives a fair per capita, and I trust will not be reduced in the levy for the next two years.

I am, dear doctor,

Yours truly, etc.

Moreover, in the session of 1880, the tax levy bill, as originally introduced, appropriated but \$1,000,000 for the school fund. The following communication I addressed to the members, and the amount was increased to \$1,400,000.

DEPARTMENT OF PUBLIC INSTRUCTION, }
Sacramento, April 3rd, 1880. }

DEAR SIR—Assembly bill 576, introduced by Dr. May, proposes to raise for the State school fund, for the thirty-second fiscal year, the sum of \$1,000,000 only. This is a very much smaller sum than has been raised for many years past, as will be seen by the following table:

The number of children, by the census next June, will be about 228,000—estimated on the basis of last year's percentage of increase.

One million will give but \$4.385 per census child. The *lowest* per capita in the last six years, as shown by the following table, is \$5.774, and even that for a census roll of 228,000 would require an appropriation of \$1,306,472.

The *highest* per capita, as shown below, was \$6.878, which for 228,000 would require \$1,568,184.

The *average* per census child for the last six years is \$6.345. This certainly is as small as the per capita should be, and, on the basis of 228,000 children, would require that the sum to be raised be \$1,446,660.

I would, therefore, recommend that the bill be amended to read \$1,400,000 instead of \$1,000,000, as it now reads.

Fiscal year.	Census Children.	Apportioned by Legislature.	Average per Census Child.
26th.....	159,917	\$1,100,000	\$6.878
27th.....	171,563	1,130,000	6.586
28th.....	184,787	1,201,000	6.499
29th.....	200,067	1,300,000	6.497
30th.....	205,475	1,200,000	5.840
31st.....	216,402	1,250,000	5.774

Average per capita, \$6.345.

Respectfully submitted, etc.

I have always endeavored to secure liberal appropriations for school purposes, and shall continue to do so. Be it yours and mine to see to it, that they are wisely and judiciously expended, yielding the largest possible returns in the moral, intellectual, and physical training, instruction, and education of the children of our State.

C.

On Saturday, May 14th, the new Normal School building at San José will be formally dedicated. The exercises will commence at two o'clock P. M.

A correspondent writing to the *Independent*, a newspaper published in Oakland by our old friend Dan. Gelwicks, finds fault with the cost of the public schools in that city, and takes exceptions to the salaries paid to some of the teachers, especially to that paid to J. B. McChesney—a man, by the way, who could n't be overpaid for the good work he has done in that community if he should be paid a thousand dollars every thirty minutes during the remainder of his natural life, of which, we hope and believe, he has n't lived the half yet. But, enthusing with his subject, the correspondent closes his communication with the statement that the office of the State Superintendent is costing \$17,000 per annum; that it is too much, and should be reduced. Attention is called to this communication simply to show how unreasonable some people can be when they really strive to be. Seventeen thousand dollars a year too much, forsooth! Why, just think of it; that sum must cover everything, salaries, portorage, traveling expenses, postage, expressage, telegraphing, etc., etc. However, for the purpose of quieting the nerves of our anonymous friend, it may be just as well to mention right here, that the appropriation of \$17,000 is not for *one* year, but is for *two* years, as all the appropriations made now must be.

The sum of \$8,000 has been subscribed and paid by the citizens of Los Angeles, being the amount of the mortgage on the piece of land selected by the trustees as the site for the Branch Normal School. The mortgage has been satisfied, and the abstract of title to the property is in the hands of the Attorney-General for his approval.

As no new edition of the book containing the School Law, Constitution of the United States, Constitution of California, etc., will be issued for two years, the economical distribution, and careful preservation of the copies already issued, are respectfully enjoined upon superintendents, trustees, and teachers.

The State Board of Education will meet at Sacramento on Saturday, May 21st.

SCIENCE RECORD

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN MAY.—*Mercury* rises on the 11th at 4 h. 40 m. A. M.; on the 18th nearly with the sun, and for the remainder of the month he rises after the sun. On the last day of the month he sets at 8 h. 46 m. P. M. He is near Saturn on the 6th, Jupiter on the 7th, and near the moon on the 29th. *Venus* sets on the 5th with the sun, and from this time to the end of the year in daylight. On the 31st she rises 3 h. 40 m. A. M., and is near the moon on the 25th. *Mars* is a morning star rising on the 11th at 3 h. 21 m.; on the 21st at 3 h. 1 m., and on the 31st at 1 h. 41 m. A. M. He is near the moon on the 23rd. *Jupiter* and *Saturn* are near together during the month, and so close to the sun that they

are not in a favorable situation for observations. They are both morning stars, rising at the beginning of the month but few minutes before sunrise, but this time gradually increases so that at the end of the month they both rise about an hour before the sun. They are near the moon on the 25th at about midnight.

AN ENGLISHMAN, J. Banting Rogers, has invented a game which is likely to be of service not only as a really interesting amusement, but also as a means of acquiring a considerable knowledge of navigation and meteorology. It is entitled the game of "A Voyage Round the World," and is played on a large board representing the ocean, suitably divided for counting by knots, and with hazards in the shape of cyclones, collisions, etc., which add excitement to the game. The game is played by means of a number of small models of ships of various kinds, and cards in which the number of knots is marked within which the players may move. Logs are kept, watches appointed, and a captain of the watch to record distances, etc. Altogether it will be seen that in Mr. Rogers' ingeniously devised game there are great possibilities both of amusement and instruction.—*Nature*.

A NEW and somewhat bold hypothesis as to the cause of earthquakes has been propounded by Dr. Novak in Pesth. He considers that besides the rotation of the earth on its axis, and its revolution round the sun, a multiplicity of motions of the earth appear in space, in virtue of which the earth's axis, and with it the equator, change positions. This causes a variation of the forces influencing the earth's form, (centrifugal and centripetal) and the earth has the tendency to adapt itself to this change. He also considers a change of form of the earth to occur through the shifting of the pole and the equator, and that this may have effect some time afterward, where the earth's crust is weak.—*Nature*.

M. PASTEUR has reported concerning experiments on the endurance of vitality in the germs of disease. Seven sheep were led daily, for a few hours, to a piece of ground where some animals that had died of anthracoid disease, or *carbon*, had been buried twelve years previously. Two of the sheep caught the disease and died. As there was no grass on the spot for the animals to eat, M. Pasteur believes that they must have received the germs of the malady from smelling about the ground, as sheep are in the habit of doing.—*Popular Science Monthly*.

SO ANOTHER Frenchman has startled the feminine world by inventing a machine for the manufacture of real laces. Its inventor claims that it will manufacture every lace yet made by the bobbin. If it fulfills its promise, it will, of course, produce an enormous depreciation in the value of fashionable wardrobes, and will be hailed with joy by all stingy husbands. A correspondent of the New York *Telegram* says of it: "I went yesterday to an experimental exhibition of the machine at a factory near Paris, where I saw it at work. It is certainly one of the most ingenious pieces of mechanism ever invented. It has four or five distinct movements on a single bar, and imitates bobbin-weaving by the human hand to perfection. Blonde, Valenciennes, and thread laces were woven in the presence of the visitors with extreme rapidity, and in the opinion of several lady connoisseurs present, all the specimens shown, with one exception, were fully equal to those made by hand.

DR. WERNER SIEMENS has applied electricity to the operation of elevators. His system, which operates through the transmission of power by the dynamo-electric machine, is as safe as the hydraulic system, and is claimed to be far less costly and inconvenient.

RAW OYSTERS.—Dr. William Roberts, in an interesting series of lectures on digestive ferments, published in the *Lancet*, says: "The practice of cooking is not equally necessary in regard to all articles of food. There are important differences in this respect, and it is interesting to note how correctly the experience of mankind has guided them in this matter. The articles of food which we still use in the uncooked state are comparatively few, and it is not difficult in each case to indicate the reason of the exemption. Fruits,

which we consume largely in the raw state, owe their dietetic value chiefly to the sugar which they contain; but sugar is not altered by cooking. Milk is consumed by us both cooked and uncooked, indifferently, and experiment justifies this indifference; for I have found on trial that the digestion of milk by pancreatic extract was not appreciably hastened by previously boiling the milk. Our practice in regard to the oyster is quite exceptional, and furnishes a striking example of the general correctness of the popular judgment on dietetic questions. The oyster is almost the only animal substance which we eat habitually, and by preference, in the raw or uncooked state, and it is interesting to know that there is a sound physiological reason at the bottom of this preference. The fawn-colored mass which constitutes the dainty part of the oyster is its liver, and this is little else than a heap of glycogen. Associated with the glycogen, but withheld from actual contact with it during life, is its appropriative digestive ferment—the hepatic diastase. The mere crushing of the dainty between the teeth brings these two bodies together, and the glycogen is at once digested, without other help, by its own diastase. The oyster in the uncooked state, or merely warmed, is, in fact, self-digestive. But the advantage of this provision is wholly lost by cooking, for the heat employed immediately destroys the associated ferment, and a cooked oyster has to be digested, like any other food, by the eater's own digestive powers.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

MENDOCINO COUNTY.

Mrs. C. C. Hamilton takes the position of assistant teacher in the public school at Mendocino, in place of Miss Emily Van Dusen, resigned. Miss Van Dusen's resignation is greatly lamented by both parents and pupils.

Miss Sophie Cranz takes charge of the school at Little River.

Miss Hattie Bromley reopened the school at East Round Valley, April 18th.

SOLANO COUNTY.

The Benicia schools are all in a flourishing condition; the attendance large and regular, and good work being done.

The graduating class of the Vallejo High School numbers five.

Miss McPhail of Vallejo, is teaching at Foley's school-house. She opened the school April 4th.

SANTA ROSA COUNTY.

Rev. E. O. Haven, D. D., L.L. D., will deliver an address at the Commencement

exercises of the Pacific Methodist College. He is one of the twelve bishops of the M. E. Church South.

SONOMA COUNTY.

At the city election held at Petaluma, April 19th, James S. Sinegly, W. H. Dalton, and E. A. Edelman were elected school directors.

Miss Fannie Mathews is teaching the public school at Duncan's Mills.

Mrs. J. A. Eveleth has been appointed to fill the vacancy in Alexander school district, caused by the resignation of Miss Virginia Patchett.

Miss Talmage, a teacher in the Freestone public school, was thrown from a buggy April 10th, and dislocated an arm.

Strawberry school district in Bennett Valley, is to have a new school-house.

Teachers recently appointed in this county are, W. D. Kelley, Eureka; Irving Reynard, Watmaugh; J. S. Coulter, Gualala; J. W. Gaston, Marin; Miss Ella Kelly, Mayacama; Miss Emma Lathrop, Mountain: John An-

derson, Grape; Miss Mary Beck, Ocean; Miss Sally Heald, Ridenhour; Miss Della Clayton, San Luis; Miss Minnie Cook, Strawberry; Miss Ida Nunn, Timber Cove; Edward Gibbs, Walker; Miss Kate Hinckley, Watson; Miss Nellie Denman, Wilson; Miss Nellie Dinwiddie, Austin Creek, Scotta district.

The County Board of Education held a meeting April 1st and 2nd, at which it was decided to strike out Rule IX of the Board, which forbade the examination of parties not residents of the county. A committee was appointed to revise the list of books to be used in the public-school libraries.

A committee consisting of Messers M. Dozier and E. W. Davis was appointed to prepare a course of study for advanced grades in country schools.

Mrs. R. K. Wilder, an experienced teacher from Massachusetts, has opened a kindergarten school in Petaluma.

Healdsburg public schools close on June 4th.

The Bloomfield school is progressing finely. Miss P. S. Colby is principal, and Miss Mary G. Stone assistant.

SAN LUIS OBISPO COUNTY.

The Washington district school is reported to be in a very flourishing condition, nearly every child in the district being in attendance.

YUBA COUNTY.

The County Board of Education have adopted for the public-school libraries the list of books prepared by the State Board, with about twenty additional selections.

LAKE COUNTY.

The public school in Bachelor Valley is taught by Miss Minnie Crump of Santa Rosa.

ELDORADO COUNTY.

The Olympic Club of Placerville gave an entertainment at Sierra Hall, April 26th, for the benefit of the public schools of that place.

The Placerville public schools close Friday, May 6th.

J. E. Polhemus will open a private school in the public-school building at Placerville.

SAN MATEO COUNTY.

In the Pescadero Grammar School, W. B. Turner principal, there are twenty-five scholars whose last monthly report in scholarship and deportment averaged 90 or over.

Miss Wolfe has taken Miss Whitmore's place in the public school at Half Moon Bay.

H. S. Pitcher furnished his Centennial Park free, for a picnic for the scholars of the public schools on May 1st.

The San Gregorio School opened April 4th, with Miss Alice Leahy as teacher.

The overcrowded condition of the school at Woodside necessitates the addition of a new room. The trustees have added much to the library and furniture, and also a \$30 globe to the school apparatus. From the library money they bought a walnut book-case, together with charts and maps. The teacher is Miss A. Kennedy, who is giving satisfaction to all.

The La Honda and Bell district schools have opened, the former having as teacher Miss Georgia Woolsey, and the latter Miss Ida Wood, who has already taught there two terms.

The school-house in Tunitos district, finished last November, is a comfortable, commodious building. The library is well supplied, the school-room well furnished with charts, maps, etc. The total cost of the building is less than \$1,870, and the district debt is only a little over \$200. They are now taking steps to clear and improve the four-acre lot (donated by Dr. McCoy) making it a beautiful play-ground. The present term opened March 28th, with Miss Baker as teacher. She had charge of the school last year.

Prof. L. B. Lamson, of San José, has organized a writing-school in the public school building at Redwood City.

NAPA COUNTY.

The Board of Education decides to change some of the text-books now used in the public schools.

The trustees of Carneros district have issued a notice of a meeting to be held May 14th, to vote on the question of raising by tax, \$1,000, to build a new school-house.

The Hardin district school opened April 8th, with Miss Mitchell for teacher.

Miss Johanna Alstrom opened the Spring Mountain school April 11th. The school-house has been newly painted, and a front porch added.

SAN DIEGO COUNTY.

The people of San Diego are agitating the question of building a new school-house which is much needed.

Spring Valley, a suburb of San Diego, is to have a new school-house. The money has been raised by subscription. The nails, locks, hinges, etc., were freely given by Steiner, Klauber and Co., and several donations of timber have been received.

SANTA CLARA COUNTY.

The Santa Clara County Teachers' Institute for the school year ending June 30th, 1881, will be held May 19th.

The new bell which has been placed in the State Normal School building weighs 3,000 pounds, and cost \$1200.

A meeting of the Executive Committee of the State Normal School alumni was held April 23d, at the office of the county superintendent, L. J. Chipman.

SAN JOAQUIN COUNTY.

C. M. Ritter, who has been for several years connected with schools in Stockton, goes to Austin, Nevada, to take charge of the high school there.

TRINITY COUNTY.

Miss Kitty O'Neil of Weaverville, is now teaching the public school at Indian Creek.

Bids for supplying Trinity County with text-books—arithmetic and book-keeping—will be received at the office of the county superintendent up to June 29th.

SACRAMENTO COUNTY.

A new school-house has been erected on the San Juan grant, eleven miles from Sacramento.

HUMBOLDT COUNTY.

Miss Hattie Fuller, who has been teaching in Petaluma for several years, has resigned her position there, and taken a school in Ferndale.

Mr. S. C. Boom, who had charge of

the public schools of Petrolia, has finished his labors there, and gone to Hydesville to teach.

COLUSA COUNTY.

The following is the report of Webster school for the month ending April 15th, 1881. Grammar department, Mr. G. L. Cutler teacher: enrolled, 26; average attendance, 21. First intermediate, Miss Rathbon teacher: enrolled, 45; average attendance, 36. Second intermediate, Miss Katie Morris teacher: enrolled, 45; average attendance, 41. First primary, Mrs. E. M. Miller teacher: enrolled 49; average attendance, 39. Second and third primary, Mrs. S. L. Drake teacher: enrolled, 117; average attendance, 91. Total enrollment, 310; total average of attendance, 256. Entire registration 403.

LOS ANGELES COUNTY.

The State Trustees have selected Bellevue Terrace as a site for the new State Normal School buildings.

The County Board of Education has adopted a list of books for the school libraries of the county. The selection comprises many new and valuable works. Over twelve hundred volumes are included in the list.

The semi-annual teachers' examination begins June 21st, and continues three days.

The graduating exercises of the Anaheim High School will be held Thursday evening, June 2nd. The graduating class numbers five members.

T. A. Saxon of El Monte has been appointed to fill the vacancy in the Board of Education caused by the resignation of G. C. Hall. Prof. Hall resigned to take the principalship of the Tucson schools, Arizona.

Prof. J. M. Hewes has severed his connection with Tustin City school. He will recreate beneath the umbrageous foliage of his own orange grove.

The Los Angeles *Commercial*, a daily paper published in the metropolis of Southern California, takes us to task for not giving the source whence we obtained our Los Angeles items in last month's JOURNAL. By this note we acknowledge both our

obligation to the *Commercial* and our remissness in not giving due credit at that time. The edition of the *Commercial* from which our item was taken, was highly creditable to its conductors, and gave a glowing picture of the resources and condition of Los Angeles. What pleased us especially was the very full and encouraging description of the school system of that city and county. We hope to have a chance to copy from the *Commercial* frequently, with more care in the future in regard to our authority.

PLACER COUNTY.

The Ophir public school closed April 1st. The principal, Mr. R. D. Faulkner, has given general satisfaction to both trustees and patrons. He went to Alta, April 18th, to take charge of a school there.

Miss Carter has reopened the Wisconsin Hill school.

The Iowa Hill school is in session, with an average attendance of 35 in Mr. Drew's room, and 55 in Miss Murphy's.

NEWS RECORD.

OUR record extends from MARCH 28th, to APRIL 30th inclusive.

Foreign and Domestic.

Extraordinary floods on the Missouri and Mississippi rivers converted portions of Nebraska, Dakota, Iowa and Missouri, into an inland sea, during the month of April. Great destruction of property is occasioned by the floods, accompanied by the loss of many lives. At Council Bluffs and Yankton, on the Missouri, the losses are reported as the greatest, and at the Bluffs the river may cut a new channel through the center of the town, leaving a portion of Iowa on the Nebraska side of the river.

Earthquakes were continuous and violent in the islands in the Eastern Mediterranean in April. Scio, a beautiful and fertile island near the coast of Asia Minor, has been rent by violent shocks, and, in addition to the fearful loss of property, reports come to us of the destruction of from 6,000 to 15,000 inhabitants.

The Nihilists who were on trial for the murder of the Czar have been sentenced to death, and executed.

Both houses of the Illinois Legislature have voted appropriations of \$5,000 each to the Lincoln and Douglas monuments at Springfield and Chicago.

Both houses of the Parliament of Brazil have adopted Article VIII of the reform of the Constitution, which gives to Protestants and their religion the same civil and political rights as the Catholics enjoy.

Germany, Austria, and Russia have formally recognized the Kingdom of Roumania.

Sir Charles Reed, president of the London school board, is dead.

Benjamin D'Israeli, Earl of Beaconsfield, is dead. He was seventy-six years old.

President Beard, of the Orange Free State, is very much exercised over the reports concerning the attitude of his constituents toward the Transvaal Boers. He denies that the Orange Free State Boers have formed a league in Natal to interrupt the British army telegrams to London. He says he has taken stringent measures to preserve neutrality.

It is altogether likely that a peaceable solution of the Grecian boundary dispute may be reached, as most of the Great Powers have consented to the Sultan's proposition to leave the question to an international commission to meet at Constantinople. The Albanian League has offered the Sultan 20,000 men in case of a war with Greece.

A great popular manifestation occurred at Paris yesterday in honor of the birthday of Victor Hugo.

Lord Dufferin has been appointed Governor-General of India.

The King of the Ashantees has declared war against England.

The distress is so great among the Ural tribes of Russia that they are selling their male children for bread, and leaving the girls to perish.

The reports of rich mineral discoveries at Takou, Alaska, are still exciting the people up north.

All Jesuits have been banished from Guatemala, and any caught there are invariably executed.

The Czar is distributing money in the famine-stricken districts of Russia.

The new Russo-Chinese treaty has been signed at St. Petersburg.

The early part of February, 1881, will long be remembered over all the Union, in fact, all over the civilized world, for terrific rain storms. Floods prevailed almost everywhere. Washington, D. C., was inundated, something unprecedented. Throughout California, storms raged with a strength and persistence hitherto unknown. A greater part of the Sacramento Valley was for about a week under the water.

Educational.

The Illinois Supreme Court has decided that German may be taught in the schools as a part of a "good common-school education," the term referring to the studies in the schools, no matter in what language they are taught.

President Garfield, ex-President Hayes, and John Hay, Amasa Stone's son-in-law, are among the trustees the Western Reserve College is to have after it has been removed to Cleveland and christened Adelbert.

The Jews of Hungary form less than five per cent. of the population, but they furnish eighteen per cent. of the university students; and two-thirds of the Jewish students study jurisprudence.

The Oxford (Eng.) University calendar shows a slight increase in the number of undergraduates. There are now 2,882, against 2,814 a year ago.

All of the women nominated for the office of school-director in Iowa are reported to have been defeated at the election some days ago.

It is stated that the first three Wranglers at Cambridge University, England, this year were abstainers from alcohol and tobacco.

The American Institute of Instruction will hold its next meeting at St. Albans, Vt., during the first week in June.

Next year Gambetta proposes to devote \$18,000,000 to public instruction in France, and he specially designates a part of this sum for the education of girls, for he says the best advisers he ever had were women.

In Michigan all women paying taxes may hold school-offices, and men who are not taxpayers cannot.

Mr. Thomas A. Scott, the railroad king, has recently made gifts to several institutions, amounting in the aggregate to over \$150,000. Of this \$50,000 go to the endowment of the Chair of Mathematics in the University of Pennsylvania, \$50,000 to Jefferson Medical College, \$30,000 to the Orthopedic Hospital, and \$20,000 to the Children's Department of the Episcopal Hospital.

A teacher in Philadelphia was lately arraigned before the Board of Education for teaching too much religion to her pupils, the complainant being a Roman Catholic priest, who claimed that she prejudiced the children against his church and made Protestants of them. On the other hand, the Rev. Dr. Batterson, a Protestant Episcopal pastor in the same city, publicly accused a male teacher of being an agnostic, and of instructing his pupils that the Mosaic account of the creation is untrue.

Ten Western States, from Ohio to Nebraska, including Missouri, spend \$36,292,492 annually on education, and the Southern States, from Virginia to Texas, spend \$8,763,972. The school population of the Western States is 5,590,075, of the Southern 4,490,107.

France, according to a recent official report, has teachers' mutual aid societies in every department. The total capital of these societies is 2,000,000 francs. A bill has been introduced in the French Chambers, by M. Paul Bert, tending to improve the salaries of all primary school teachers throughout the country. The bill provides for an appropriation of 79,000,000 francs against 59,000,000 spent for salaries of primary school teachers in 1880. The teachers are to be divided into the following classes: Teachers in probation, 900 francs; teachers of the fifth class, from 1,000 to 1,200 francs; teachers of the fourth class, from 1,300 to 1,500 francs; teachers of the third class, from 1,600 to 1,800 francs; teachers of the second class, from 1,900 to 2,200 francs; teachers of the first class, from 2,200 to 2,600 francs. Male and female teachers are to receive the same salary. There are at present 20,000 teachers in probation, 28,000 of the fifth class, 20,000 of the fourth, 8,000 of the third, 3,200 of the second, and 800 of the first. Total, 80,000, viz: 50,000 males and 30,000 females.

The introduction of sewing as one of the regular branches of study in the public schools is being seriously discussed by the Chicago Board of Education.

In Pennsylvania, the State Superintendent of Public Instruction is appointed by the Governor. This plan may have its advantages, but we fail to see them. Under it Dr. J. P. Wickersham—one of the most eminent living educators, a man who as a school organizer has no superior in either continent—has failed of reappointment, though the strength and efficiency of the school system of Pennsylvania are due to the administrative ability displayed by him in a fifteen years' term as State Superintendent. At this distance, we can certainly not be accused of undue partiality or partisanship; but we feel that Governor Hoyt of Pennsylvania, by his virtual removal of Dr. Wickersham, (though the latter handed in his resignation a year ago, and barely consented to fill the place until his successor could be found) has dealt a severe blow at the public school interest of the entire country. No personal *animus* or political feeling can justify the act.

The University of Cambridge, England, has decided by a vote of 398 to 32, to admit women to its honor examinations on equal terms with men. They are to be published in the regular class-lists and receive official certificates of the rank and honors attained.

The Evansville *Courier* claims that Indiana has the largest school fund of any of the States. The available fund now amounts it is said to more than \$9,000,000. This is the permanent fund drawing interest, the State having \$4,000,000 of it loaned at six per cent.; the rest being loaned to individual borrowers in the various counties at eight per cent.

Measures have been taken at Detroit to secure a non-partisan school-board. A committee has been appointed to select a good ticket for election, which shall contain the names of an equal number of men belonging to both political parties.

Edison, the electrician and inventor, has been elected professor of dynamic electricity at Oberlin College, Oberlin, O.

Personal.

Mrs. John Jacob Astor has just sent another party of one hundred children to homes in the West, through the agency of the Children's Aid Society. The whole number of homeless little ones thus provided for by Mrs. Astor is 813, at an expense of more than \$11,500. Mr. Whitelaw Reid, editor of the New York *Tribune*, has also been instrumental in providing good homes in the West for many neglected little New York waifs.

Mr. Spofford, the Librarian of Congress, is a man of note in Washington. His age is about fifty-five, and he is very modest and retiring. He is never tired of talking about the library, which has grown during his incumbency from 25,000 volumes to nearly 400,000. He thinks of nothing but books from morning till night, and there is not a volume in this vast collection with whose contents he is not measurably familiar. He knows where to turn for any book that may be wanted, and he fairly delights in unearthing forgotten facts and startling statistics from old volumes that nobody else knows anything about. Many a member of Congress has gained wide celebrity as a wise and working legislator by a judicious use of Mr. Spofford's book-knowledge, but the dreamy-eyed enthusiast never cares who uses his facts, so long as he has the proud privilege of garnering them.

King John of Abyssinia will be crowned as Negus Negussim and Emperor of Ethiopia at Gondar, next month. At one time the city of Gondar had from fifty to one hundred churches, and about 50,000 inhabitants. Its population numbers at present about 7,000.

The ides of March were no more fatal to Cæsar, than to the house of Romanoff: the Czar Paul having been assassinated in March, 1801; the Czar Nicholas probably dying by his own hand in March, 1855; and Alexander II meeting his death in March, 1881.

Kossuth, who is seventy-nine, lives in a fine villa near Turin, with a lovely garden, cultivated by himself. Natural science is one of his favorite studies.

M. Numa Droz, President of the Swiss Confederation, and President Garfield, were both school-teachers at one time.

Edmond de Lafayette is the only grandson of General Lafayette, in the direct male line, now living.

A savant, M. Armengaud the younger, of Paris, has a collateral invention to the photophone, which he proposes to call the "telescope," by means of which, he says, we shall be able to see objects situated upon any part of the earth's surface at any distance from the observer. His reasoning is based upon the laws of reflection of images, and the scientists to whom he has communicated his conception are confident of its feasibility.

Mr. Lockyer thinks that the four classes into which the stars have been divided by means of the spectroscope, indicate successive steps in stellar existence from vigor to decay, the whitest stars being probably the youngest, while the reddest are the oldest.

General Notes.

The attempt to take the North Pole by storm having failed, it is now to be regularly approached by siege, several nations joining in the attempt to unveil its mystery and discover its secret. Russia will occupy a station at the mouth of the Lena in Eastern Siberia, and another on the new Siberian island, east of Wrangel Land; Sweden will keep watch at the North Cape in Finland; Denmark will make observations at Upernavik, Greenland; Germany will establish a post on the island of Jan Mayen, east of Greenland; Holland, with sturdy Dutch persistency, will plant herself at the mouth of the Obe and Spitzbergen; Austria will occupy Nova Zembla, and Canada Melville Island; while our own government will send out early in the summer two expeditions, one to Lady Franklin Bay, under the command of Lieutenant Greeley, of the Signal Service Corps, and the other to Point Barrow, on the northern coast of Alaska. It is also proposed, as part of the work of the eastern American expedition, to explore the northern coast of Greenland for the purpose of settling the question as to whether that country is an island or a continent. The Signal Service will be strongly represented on both expeditions, special attention being given to meteorological observation. This friendly rivalry of nations in the interests of science is one of the signs of the good time which is to come.—*Christian Union*.

It will be interesting to Californians to read the following from the *Scientific American*, in regard to the exhibition of fish at Fulton market, New York, on April 1st: "The trout stand was the magnet, for here were specimens of the speckled beauties from Canada, Maine, Connecticut, Vermont, New Jersey, Pennsylvania, the Empire State, England, and remote California; indeed to the California exhibit must be awarded the palm. There were trout in tanks, and trout in banks; live trout and dead trout; big trout and little trout; trout reclining on beds of moss, and trout suspended in bowers of roses. The two principal exhibitors of California trout were B. B. Redding, Fish Commissioner, and M. T. Brewer of San Francisco. Fish Commissioner Redding sent an exhibit of Truckee River trout, a large black-spotted fish which grows from six to ten pounds weight."

George H. Boker tells this story about Edgar A. Poe: "One day I was sitting at a bookseller's, who also published a serial, when Poe came in. If shabby, he was generally genteel, and had the inherent look of a man of the world, out of place and ostracised, yet with a compensating pride in his sense of finer intellect. After some

little while, he said to the publisher: 'Lend me ten dollars.' 'I can't do it.' (He was already in debt to his friend a hundred or two.) 'Lend me five then,' said Poe. 'I can't do it, Poe. I have made up my mind not to lend any more.' 'Well,' said Poe, 'will you give me ten dollars for a poem?' 'Yes, I will be glad to do that.' Poe sat down, and, almost without hesitation, wrote a sonnet, exquisite in its wording, tender in its feeling. He handed it over to the publisher, who paid the money."—*N. Y. Independent*.

The grading for the Northern Pacific, up the valley of the Yellowstone, is being pushed with great energy. Three thousand men will be employed as soon as the frost is out of the ground, preference being given to persons who intend to settle in the country.

The committee at work on the revision of the Bible are making some changes in the text that will hardly become of general use for at least two generations. The Lord's Prayer, for instance, is rendered as follows: "Our Father which art in heaven, hallowed be thy name. Thy kingdom come. Thy will be done, as in heaven, so on earth. Give us this day our daily bread, and forgive us our debts as we also have forgiven our debtors. And lead us not into temptation, but deliver us from the evil one."

The artesian well at Buda-Pesth, commenced twelve years ago, was recently finished. Its depth is 3,200 feet, and the temperature of the water 165 degrees F. A daily record of the mud taken out showed an increase of one degree for every 23 feet bored. When the water first burst into the boring, 227,000 gallons were discharged in 24 hours; afterward the yield was reduced to 167,200 gallons in 24 hours. The water disengages large quantities of carbonic acid, and holds in solution sulphureted hydrogen and carbonates of potash, soda, lime, and magnesia.

The Egyptian obelisk, called Cleopatra's needle, weighing 219 1-2 tons, was set up in Central Park, New York, January 22nd. It was first erected in Egypt 3,500 years ago. Afterward it was removed to Alexandria, where it lay on the ground until 23 B. C., when it was erected before the palace of the Cæsars. Mr. William H. Hurlbert, who was in Egypt at the time of the completion of the Suez canal, persuaded the ruler of Egypt, Ismail Pasha, to present it to the United States. Lieutenant-Commander Gorringe agreed to bring it from Egypt and set it up in New York for \$75,000, and it is said that Mr. Vanderbilt furnished the money. Mr. Evarts delivered an address on the obelisk in Central Park, February 22nd.

Much interest centers in the three plans for bringing ships across the Pacific to the Gulf of Mexico. The first plan is that of a canal running for a distance along the valley of the Chagres near Aspinwall, and ending at Panama. This will be a tide-water canal, requiring no locks. A tunnel will have to be dug to allow its passage through a mountain range. Its length will be forty-three miles, and it will be wholly in the United States of Colombia. The general direction of the canal will be from northwest to southeast.

The second plan is that of a canal running from Greytown on the Caribbean coast, along the San Juan river, for sixty-three miles. At this point the canal will empty into the San Juan, which is navigable to Lake Nicaragua. A canal, sixteen miles long, will connect the western coast of the lake with Brito, a port on the Pacific. Lake Nicaragua is one hundred and seven feet above the sea level, and, therefore about ten lift-locks of ten feet each will be necessary on each side of the lake. On the western shore of the lake, hills one hundred and thirty-four feet high rise, through which a deep cut will have to be made. The general direction of the canal will be east and west.

The third plan is that of a ship railroad, running from La Ventosa on the Gulf of Tehuantepec, to Minatitlan on the Gulf of Campeachy. This plan of taking loaded ships across the isthmus on cars is Captain Eads', who built the steel bridge at St. Louis and the jetties at the mouth of the Mississippi. The Mexican government has made Captain Eads liberal promises of lands and money. The estimated cost of the Panama canal is \$110,000,000; that of the Nicaragua canal \$75,000,000, and that of the ship railroad \$75,000,000. Our growing trade with the western coast of South America, Lima, Japan, Australia, and the islands of the Pacific demands the carrying out of one or all of these plans.—*Exchange*.

Algeria has been in possession of the French for fifty years. It was a savage and almost uncultivated country, but is gradually being transformed into one of the richest and most productive in the basin of the Mediterranean. The Kabyles are descendants of the aboriginal inhabitants of the country, mixed with Roman, Vandal, and Byzantine blood. The Arabs have attained a little of civilization, and have acquired the manners of modern French society, but the great mass of the population are about as wild as ever.

The different parts of a common candle-flame are well worth study, and teach us much. If you carefully look at the flame of a candle burning steadily, you will see that the flame consists of three parts: 1. A blue scarcely visible outer zone or mantle, and where the combustion is completed; 2. An inner bright or luminous belt, where the soot is separated out and the light is given off,

and where the combustion is incomplete; 3. A black cone in the inside, consisting of the unburnt gas given off by the wick. The candle is, in fact, a small gas-works; the wax or tallow is the material which is distilled, the wick is the retort where the distillation goes on, and higher up and outside of this the gas burns. You can show this black cone consists of unburnt gas by taking a small bent piece of glass tube and putting the end into the black center of the flame; the unburnt gases will pass up the tube and may be lighted at the other end.

The trustees of the Lick Observatory have finally closed the contract for the optical part of their great telescope. There has been considerable doubt whether a refractor or an enormous reflector would be selected, but the decision is in favor of the former. The object-glass is to be three feet in diameter, and the Clarks of Cambridge, Mass., are to make it for \$50,000. The mounting for the instrument is not yet provided for. Proposals will be obtained from the principal instrument-makers of Europe and this country. Probably the mechanical part of the instrument will cost as much as the optical. It may be three years before the telescope is finished. If the instrument proves successful, it will be the most efficient ever pointed at the heavens. Its power will exceed that of the Pulkowa glass by forty-four per centum, and it will be almost twice as powerful as the great telescope at Washington, which at present is the best of its kind.

Naturalists assert that cabbages grew wild in Siberia; celery originated in Germany; the potato is a native of Peru; the onion originated in Egypt; tobacco was a native of South America; millet was first discovered in India; the nettle is a native of Europe; the citron of Asia; oats originated in North Africa; rye came from Siberia; parsley was discovered in Sardinia; the parsnip is a native of Arabia; the sunflower was brought from Peru; spinach was first cultivated in Arabia; the horse-chestnut is a native of Thibet; the quince came from the Island of Crete; the pear is supposed to be of Egyptian origin; the horse-radish came from the south of Europe.

Lieut. Schwatka's search party for the remains of Sir John Franklin's expedition endured a cold which at one time fell to 71 degrees below zero. The lowest degree of natural cold ever observed was, according to Humboldt, 76 degrees below zero, experienced by him at Yakutsk, Siberia.

Mr. S. H. Scudder has recently published a memoir on the oldest known insects, those found in the Devonian rocks of New Brunswick, in which he announces some interesting conclusions. The earliest insects were hexapods, (six-footed) and, as far as the record goes, preceded in time both arachnoids (spiders) and myriapods (many-legged insects.)

Remodeled regulations for the elementary schools in France have just been issued. They forbid corporal punishment, and provide that the wish of the father shall always be consulted as to participation in religious instruction; that children shall not be sent to church for catechism or service except out of class-hours; that the teacher shall not be bound to take them or watch over them there; that Sundays and Thursdays shall be holidays; and that punishments shall consist of bad marks, reprimand, partial privation of recreation, detention after school-hours, and temporary exclusion, not exceeding two days.

The *Detroit Free Press* urges the necessity of teaching the school children more of the current history of the world. It claims that they "know infinitely more of the Wars of the Roses and the American Revolution than of the Afghan War, or the Franco-Prussian War, or even the War of the Rebellion. Of the threatened war in the East they know nothing, and it is a part of the present system that they shall know nothing. Yet, with a liberal use of the daily paper, in place of the reading-books now in vogue, both boys and girls could get a better idea of the science of government, especially as it is to-day, and would be better informed."

In his recent report, President Eliot, of Harvard College, comments upon the recitation system now in vogue at that institution. As an opportunity to examine the student, to ascertain the fact whether he has prepared the lesson of the day or not, and to bestow a corresponding mark of merit or demerit, it has generally disappeared. It has become for the teacher an opportunity to give conversational instruction by asking questions, addressed either to an individual or to the class, with a view to correct misapprehensions, and to bring out the main points of the subject clear of the details, by explaining the author in hand, or by contravening, reinforcing, or illustrating his statements. For the student, it has become an opportunity to ask questions; to receive, either in a critical or in a docile spirit, the explanations and opinions of the instructor; to review the lesson or re-examine the subject of the day, and to test occasionally his own power of translating, of stating a proposition, a case, an argument, or a demonstration; of narrating a series of events, or of describing a plant, an animal, a disease, a building, a person, or an institution.

This is what *Barnes' Monthly* says of large schools:

"The experience of a third of a century has convinced many observant persons that the aggregation of children in huge schools is a mistake. There can, of course, be no

cultivation of individual character in such schools. The children are dealt with in masses, and each child is only a unit in a crowd. They act together with the precision of machinery; but they are lost when called upon to act alone. There is, moreover, as all visitors to these large pauper schools have noticed, an unjoyous look in the children. They have old heads on young shoulders, in the sense, not of wisdom, but of hopelessness. They are dull, apathetic, helpless. They are like plants which are brought up without sunshine. They are, in fact, exotics, shut out from all contact with the care that beset their class, ignorant of family life, fed with the regularity of well-kept animals, but without any practical knowledge of the conditions under which their after lives must be passed in the struggle with the world."

Questions for General Exercises.—1. Define Caucus. 2. What is a "Readjuster?" 3. What is a bill of exchange? 4. Why is alcohol injurious to the system? 5. Why is cleanliness essential to health? 6. What are some of the principal causes of near-sightedness (myopia)? 7. Who are the Boers? 8. Why does the destruction of forests affect the rain-fall? 9. How were the river-beds made?

It is not generally known that our actual weight is at least a pound less in the morning than at night. Let one step upon the scales as he retires, and then immediately upon rising, and he will find this statement to be a fact.

Very few young women can lift more than two hundred pounds, and very few young men more than four hundred.

We are longer in the morning than at night. In some persons the difference amounts to over one inch, but the average is between one-half and five-eighths of an inch.

Very few young women measure more than twenty inches around the waist, and very few young men less than twenty. The difference in this respect between the sexes is very great. Only a few lungs possess the capacity of a gallon. Most young men can inhale about seven-eighths of a gallon, and the average young women about three-fourths. Few young women have lungs whose capacity is a full gallon, and few young men six quarts, but the per cent. is not more than two or three. The difference in the weight of young women and young men is not as much as is generally supposed. There is a difference, but it is not more, on the average, than fifteen or twenty pounds.

Very few young men measure forty inches around the chest; but the majority measure only thirty-one or two, and in this respect the difference between the sexes is very little. Few strong young women measure less than twenty-eight.—*New England Journal of Education*.

BOOK NOTICES.

ON THE THRESHOLD. By Theodore T. Munger. Boston: Houghton, Mifflin & Company. The Riverside Press, Cambridge, 1881.

This is a book of about 330 pages, in which Mr. Munger aims to put into a clear and direct form some of the principles which confront the youth of our country, as they start on the journey of life. It is an admirable book for those who are about graduating from our schools, as it deals directly with some of the most important problems pertaining to a change from reliance upon a teacher to reliance upon self. Parents and teachers are too apt to forget or disregard the radical change which must occur in the life of every student when, with diploma in hand, he turns his back upon his *alma mater*, and engages upon pursuits in which he must compete and push for himself, instead of being led in a path already cleared. The table of contents contains the following subjects: Purpose, Friends and Companions, Manners, Thrift, Self-Reliance and Courage, Health, Reading, Amusements, Faith. Each topic is treated in a simple, suggestive style, and no young person can read any of them without being better and wiser for it.

THE ART OF DRAWING AND WATER COLOR PAINTING. New York: G. P. Putnam's Sons, 182 Fifth Avenue.

We have just received two of Putnam's Art Hand-books: "Water Color Painting," and "The Art of Figure Drawing." They are quite tastefully gotten up, and, though small, are of great use to an amateur in art. The former, as the author, Aaron Penley, says, explains in a simple manner the whole system of water color painting. It deals wholly with landscape painting. Useful tables are given (with directions to use them) of the colors used in painting skies and clouds, foliage, rocks, rough water or sea, boats and shipping, figures and cattle, etc.

"The Art of Figure Drawing" has 17 illustrations by the author, Charles Weigall of England, and treats in a concise manner

with this most difficult branch of art. The first chapter deals with the relative proportion of the parts of the human frame, and those chapters following treat of the same, but separately; the last chapter or two treat of "Expression and Method of Outline," and are of more value than the preceding chapters. Susan Carter, Principal of Woman's Art School, Cooper Union, whose name appears as the editor of these handy-books, is a sufficient recommendation.

LIPPINCOTT'S GAZETTEER OF THE WORLD.

—A complete Pronouncing Gazetteer or Geographical Dictionary of the World. Containing notices of over one hundred and twenty-five thousand places, with recent and authentic information respecting the countries, islands, rivers, mountains, cities, towns, etc., in every portion of the globe. New edition, thoroughly revised, rewritten and greatly enlarged. Price \$10. For sale by all booksellers. Publishers, J. B. Lippincott & Company, Philadelphia. From J. A. Hoffman, 210 Montgomery Street, San Francisco.

There are some books which rank so high as authorities, so completely distance all competitors, that we grow unaware of the existence of aught but what is universally regarded as the standard. So it is with Lippincott's Gazetteer of the World. There may be a dozen works of similar character, but for more than twenty years, English scholars have almost unanimously agreed on this as the standard. Many editions have been printed, each embodying some improvement on its predecessor. This new edition combines the various excellencies of all; and is, at once, a work of art and a monument of learning.

Our readers need hardly be told that geographical science has made enormous strides within the past ten years. The daring explorations of Nordenskjöld in Arctic regions, of Livingston and Stanley in the "Dark Continent," have made radical changes in our conceptions of what have been practically *terra incognita*. The great wars which have convulsed Europe during

the past decade, the persistent encroachment of Russian dominion in Asia, the recent boundary-changing conflict in South America, the frequent scientific expeditions to the larger islands of Oceanica, all have combined to give new forms to the political divisions of the earth.

This Gazetteer has always been noted for its accuracy; this edition, on which the editors claim five years of diligent labor in revision, may well be allowed the same merit. Some of the special improvements in this edition appear to be as follows: First, about one-fourth more matter, there being 2,478 pages in the work. The paper is good, the type clear and distinct, and the binding strong and serviceable.

In regard to correct spelling, the best recognized authority is followed, and where these differ, the various spellings are given, with references from the less desirable mode to the preferable one under which the description appears. In pronunciation of foreign names, the pronunciation of educated people in their localities is taken, except in the case of well-known names like Paris, Vienna, etc., whose pronunciation among the best English speakers has become thoroughly Anglicized.

The adjectives and appellations of the inhabitants derived from the names of countries, cities, etc., are given, and also the meaning of many of the geographical names.

These are but a few of the features and improvements in this work. There are so many that we believe that those having old editions will desire on examination to possess the new.

Of course, school districts and teachers should have the Gazetteer. It is, in fact, as indispensable as the dictionary. Like the latter, a proper use will aid in giving a taste for reading. The Gazetteer, however, more than its companion, gives at once a vast amount of geographical and statistical knowledge that can nowhere else be found in so condensed and useful a form.

APPLETON'S ELEMENTARY GEOGRAPHY AND THE HIGHER GEOGRAPHY. Embodying a comprehensive course with many original features, accompanied with numerous engravings illustrative of new subjects, from sketches and designs by distinguished artists; with Political Map combining

every convenience for both study and reference; with Physical Maps showing at once, by a new arrangement, not only differences of elevation, but the principal minerals, animals, and vegetable products of each country; and with a Commercial Map of the World, displaying the chief exports of the leading commercial cities, as well as Steamer Routes, Submarine Cable-lines, etc. New York, Boston, Chicago, and San Francisco: D. Appleton & Co. James T. White & Co., Agency of D. Appleton & Co., San Francisco, 1881.

The above elaborate description, comprising the title page of the Higher Geography, will give a pretty clear idea of the different features of this series of text-books.

Our space, in this number, will not permit that full review to which its many merits entitle it. This, however, we must say, that for beauty of illustration both the books are unsurpassed. Some of the wood engravings, for beauty of design and delicacy of execution, will vie with anything in the monthly magazines of *Harper* and *Scribner*.

SCHOOL MANAGEMENT.—A practical guide for the teacher in the school-room. By Amos M. Kellogg. New York: E. L. Kellogg & Co. Price 75 cents.

This volume is by an educator of much experience, who gives in this book valuable hints to assist the teacher in his daily work. He believes the way to manage a school is to render the pupils manageable. The book has an introduction by Thomas Hunter, President of the New York Normal College. It discusses the subject somewhat in the objective style—visiting a school and pointing out its excellent features. Discipline, penalties, modes of interesting and employing pupils, are treated in an enlightened manner. The volume will be of benefit to any teacher. We cordially recommend it.

THE ECLECTIC HISTORY OF THE UNITED STATES. By M. E. Thalheimer. Cincinnati and New York: Van Antwerp, Bragg & Co.

Miss Thalheimer's text-books on ancient, mediæval, and modern history are distinguished for the constant appreciation by the author of the end of history study—the separation of history chaff from its true spirit, and the graphic yet simple style of her narrative. On taking up this history of

the United States, we are at once impressed with the fact that the abundance of the maps, the number and beauty of the illustrations alone, and without merit in text, would do much to instruct the learner in that development of civilized government which the spirit of history teaches. But a closer examination soon shows us that these beautiful engravings are designed systematically to illustrate a plan—a plan which recognizes history as the science of the elevation of mankind.

This book, then, to a considerable extent, rejects the husks of history, and the learner finds the fruit. The child learns not so much of dates and *unimportant* events as what manner of people lived and died on this continent during the past four hundred years. The learner finds *some kind of sense* in such history; it is no longer dry, for he sees clearly the connection between past and present, and appreciates what is meant when we say:

"Coming events cast their shadows before."

It is impossible, unless we make up a lengthy article on this book, (it is well worth it, though our space seldom permits such an extravagance) to mention one-half its excellencies.

It divides American history into six parts, viz: I. Prehistoric Ages; Discoveries and Settlements. II. Growth of the Colonies. III. War of Independence. IV. Growth of the United States. V. The War of the States. VI. The Union Restored.

We have already mentioned the maps. Especially valuable among them are, Map 1, Routes of Discoverers; Map 2, North America; and Map 9, Growth of the United States.

At the end of every chapter are copious and interesting notes, and after each period are review questions. Books are also suggested, where the reader may obtain further information. In fact, this history in skillful (or even unskillful) hands will inculcate a taste for reading.

Our space forbids our going on. In every sense this is a model text-book, and so the earnest teacher will pronounce it after even a cursory examination.

MILNE'S INDUCTIVE ALGEBRA.—By William J. Milne, Ph. D. LL. D. Cincin-

nati: Jones Brothers & Co. San Francisco: A. L. Bancroft & Co. 347 pp. Retail price \$1.00, Examination 75 cents.

A handy algebra, presenting the principles of that science in a simple and attractive manner; such is the book before us. In our first-grade country schools there is often very properly an algebra class; occasional aid, an explanation now and then, is all the help the teacher can afford. For such classes, we should deem this book of especial value. Like the author's other books on mathematics, this work is based on the inductive system. The arrangement of principles is in some respects novel, but it appears to us natural. The demonstrations are in clear language, and do not need, what is so often necessary in mathematical text-books—interpretation or translation by the teacher. One highly commendable feature is the large number of problems and examples. The answers are wisely placed at the end of the book, where are also a large number of "test questions." We believe this just the book for advanced grades in our country and village schools.

THE PRACTICAL MUSIC READER. A progressive course of Music Lessons on the inductive plan. Designed for schools and singing classes. By William Locke Smith. Jones Brothers & Co: Cincinnati. A. L. Bancroft & Co: San Francisco.

A good "singing book" for country schools has been demanded for some years by the progress of the system. We believe the book before us will fully answer all the conditions required. The lessons are arranged progressively, every new feature or new principle being well illustrated with exercises, and the songs not worn threadbare. They are generally of a lively pleasing character, with good words and good music, *not* (and this is all that need be said) of the "My Grandfather's Clock" character.

OUTLINES OF THE HISTORY OF FRANCE. —From the earlier times to the outbreak of the Revolution. An abridgment of M. Guizot's Popular History of France. By Gustave Masson. B. A. 613 pp. Boston: Estes & Lauriat. For sale by all booksellers.

Guizot's history is to France what Hume and Macaulay are to England: we can say

no more were a volume at our command, than this one sentence. Every school library, by the side of the History of the United States, should have a standard history of England and of France. This condensation of Guizot is just the book needed. The translation of the four-volume edition is not altered, except in a few instances where absolutely required for purposes of condensation. There are full historical and genealogical tables, a chronological index, and numerous portraits. The type is large and clear, the paper fine; in fact, the mechanical execution is worthy the subject and author, and in keeping with the high reputation of Messrs Estes & Lauriat, the publishers. We are not informed of the price of the book; we judge it is between \$3 and \$4.

HUDSON'S REVISED AND ENLARGED EDITIONS OF SHAKESPEARE'S PLAYS. From new electrotype plates. Explanatory Notes at bottom of page; Critical Notes at end of volume. For use in schools and families. By Rev. Henry N. Hudson, Professor of Shakespeare in Boston University. *Henry IV.*, Part First; *Henry IV.*, Part Second; *King Henry the Fifth*;

Romeo and Juliet; *Henry VIII.* Boston: Gwin & Heath. Price 65 cents each. For sale by all booksellers.

Dr. Hudson is well known as one of the greatest Shakespearean scholars of our century. The various editions of Shakespeare brought out by him, are marked by the highest qualities of literary taste and knowledge, and deep appreciation of his subject.

The volumes above named are parts of a complete series of Shakespeare's plays, fully annotated. Each volume has, also, a valuable introduction, giving the history of the drama and a full analysis of the leading characters.

These books should have a place, first, in every school library. They would constitute an especially valuable work in this place. Next, every student of English literature, whether a member of a class, or a student at home, will find this series well adapted for his purposes. We are satisfied that students of classic English need only to become acquainted with these books in order to appreciate them.

LITERARY NOTES.

The firm of Scribner & Co. will hereafter be known under the corporate title of "The Century Company," of which Mr. Roswell Smith will be the president. The firm of Charles Scribner's Sons have sold their entire interest in the former house to Mr. Smith, and the two concerns will hereafter be entirely separate and distinct. The Century Company will continue to publish *St. Nicholas* and *Scribner's Magazine*, no immediate change being made in the title of the latter, which will, as heretofore, be conducted by Dr. Holland. Mrs. Dodge will also continue to edit *St. Nicholas*. In their statement of their change of name, Messrs. Scribner & Co. declare, "that in this organization it is expected that there will be a co-operation between labor and capital in the best sense, two-fifths of the ownership being designed for the former and three-fifths for the latter."

Our *Little Ones*, a monthly magazine for children, published by the Russell Publishing Company, Boston, at \$1.50 a year, is a beautiful magazine for children one degree younger than those who can read and enjoy *St. Nicholas*. It is said to be edited by "Oliver Optic," and while in many

respects it differs from *St. Nicholas*, it resembles that delightful children's magazine in the high literary character of its contributions, in its adaptation for young children. We shall speak of this periodical again at an early day.

Lippincott's Magazine for May has an excellent table of contents. Among the articles are the following: Granada and The Alhambra, by S. P. Scott; The House of Commons, by William H. Rideing; Oyster Culture, by W. F. G. Shanks (illustrated); Pringle's Flat, a story, by David Lowry; The Indiscretions of Madame Jaubert; The Truth about Florida, by Louise S. Houghton.

The numbers of *The Living Age* for the weeks ending 9th and 16th April respectively, contain the following articles: The Unity of Nature, by the Duke of Argyll, and Guizot in Private Life, *Contemporary*; Folgore da San Gemignano, *Fortnightly*; Autumn Wanderings, *Cornhill*; Portia, *Blackwood*; Byron, *Macmillan*; Quakerism in Ireland, *Temple Bar*; Spider-Showers, *Chambers' Journal*; A Turkish Madhouse, *Globe*; With Parnell at Victor Hugo's, *Pall Mall*; Movements of Plants, *Nature*; with installments of The Freres, Visited on the Children, the conclusion of Don John, and the usual amount of poetry. A new volume began with the month.

This is an excellent publication, which we will send with the JOURNAL for \$8 a year, the price of *The Living Age* alone.

The May *Harper* contains some beautiful illustrations in addition to a table of contents, which never falls below, but is frequently above the usual high standard of the magazine. Among the articles we have space only for the following: I held Love's Head, while it did Ake—Robert Herrick; illustrated by E. A. Abbey. Music and Musicians in New York—Frederick Nast; with fourteen portraits. "Aprille," a poem—T. H. Robertson. Athens—Merrill Edwards Gates; with twelve illustrations. Decorative Pottery of Cincinnati—Mrs. Aaron F. Perry; with twenty illustrations. The Indian Girl, a poem—Elizabeth Stuart Phelps; with an illustration from Shirlaw's painting. Anne, a novel—Constance Fenimore Woolson; with one illustration by Reinhart. The Return Message, a story—Edward Everett Hale. The Market Bell, a poem—Margaret E. Sangster. Camp Lou—Marc Cook; with eight illustrations. The Unexpected Parting of the Beazley Twins—R. M. Johnston; with two illustrations by Frost. Thomas Carlyle—M. D. Conway; with eight illustrations. George Eliot—C. Kegan Paul; with eight illustrations. The Speaker's Ruling—George Ticknor Curtis. George Eliot, a poem—Elizabeth Stuart Phelps. Contrast, a poem—Nora Perry. Two, a poem—Rose Terry Cooke. "A Lacedæan, a novel—Thomas Hardy; with one illustration by Du Maurer, engraved in London. Editor's Easy Chair: The Inauguration, Carlyle's Reminiscences, The Opera of Don Giovanni, International Copyright, Admission of Women to Examination for Degrees at Cambridge, English Names and American Associations. Editor's Literary Record. Editor's Historical Record. Editor's Drawer.

In the May *Atlantic* we find among other articles some personal recollections of Carlyle, by H. James; a beautiful poem, by John G. Whittier—Rabbi Ishmael; Correspondence with a British Critic, by Richard Grant White, and The Martyrdom of an Empire, by E. H. House.

The contents of *Appleton's Journal* for May are as follows: A Question: A Greek Idyl, by Professor George Ebers, author of *Uarda*, an Egyptian Princess, etc., in two parts (second part); On some of Shakespeare's Female Characters—(II) Desdemona, by Helena Faucit Martin; Byron, by Matthew Arnold; Art Needlework, (I) by Lady Marian Alford, (II) by G. F. Watts, R. A.; Robert Wyeth, a tale; Madame de Stael; King Lear; The Metternich Memoirs; Keble and Newman, by James Anthony Froude; A New English Poet, by Joel Benton. Editor's Table: Private Ownership of Land, The Ladies Co-operative Dress Association, Joyousness wanted in Literature. Notes for Readers.

DOES SCIENCE KNOW HOW TO BUILD A CITY?—Sometime last summer, while the health of New York was being discussed in the newspapers, the proprietors of *Scribner* raised the question: Whether science knows how to build a perfectly drained and healthful city? The answer seemed to make it

appear that science does not yet know, or, if it does, its votaries certainly differ widely in the methods to be adopted.

As the result of that inquiry, Col. Geo. E. Waring, Jr., has undertaken to set forth the Diseases of Cities in the May *Scribner*, and, in the June *Scribner*, the Remedies, taking New York City as the chief example. A lively discussion may be looked for among the sanitarian scientists when Col. Waring's very radical views are exploited.

POST-OFFICE SAVINGS BANK.—The recent declaration of Postmaster James in favor of the establishment in this country of postal Savings Banks, gives timeliness to a brief paper on Post-office Savings Banks in Great Britain in the forthcoming *Scribner*, written at the request of the editor by an official of the English General Office, and presenting some facts and figures not heretofore published.

The May *Popular Science Monthly* begins its nineteenth volume, and in all the range of periodical literature we believe there is no publication that can compete with it as an exponent of modern science in an attractive form. Among the articles in this number are the following: Story of a Salmon, by Prof. David S. Jordan; Physical Education—Gymnastics, by Felix L. Oswald, M. D.; Action of Radiant Heat on Gaseous Matter, by Prof. John Tyndall, F. R. S.; Another World down Here, by W. Mattieu Williams; Eyes and School-Books, by Professor Hermann Cohn; Deep-sea Investigation, by J. G. Buchanan (illustrated); Some Prehistoric Vessels (illustrated); The Horace Mann School for the Deaf, by M. G. Morrison.

There are four or five weekly publications which we wish especially to recommend to the attention and patronage of the three thousand subscribers and fifteen or twenty thousand readers of this JOURNAL. The first is *Harper's Weekly*, an illustrated paper that is pre-eminently a journal of civilization. In no way can a people be judged better than by their newspapers. By this standard the present of the American people is full of hope, the future full of promise. Second, we must recommend very heartily *The Christian Union*, a paper representing religion without sectarianism; containing articles from the ablest minds in both continents on social and political economy, science, art, and general literature; a paper of the same type is the New York *Independent*. It treats of religion with toleration; of national affairs without partizanship; of social statics on the broad ground of humanity, and of science with the spirit of the true investigator. We wonder how it is possible to supply these papers at the low price per year at which they are furnished; the *Independent*, 32 pages, being \$3, and the *Christian Union*, 16 pages, \$2.50.

Another paper we recommend is the *Scientific American*. It is the best paper of its class in America, and we know of no way of better expending the library fund than in having a copy. In fact, if the fund were applied first in securing just those monthly and weekly periodicals named in this JOURNAL, and then in books, the interest and value of the library would be increased.

THE PACIFIC School and Home JOURNAL.

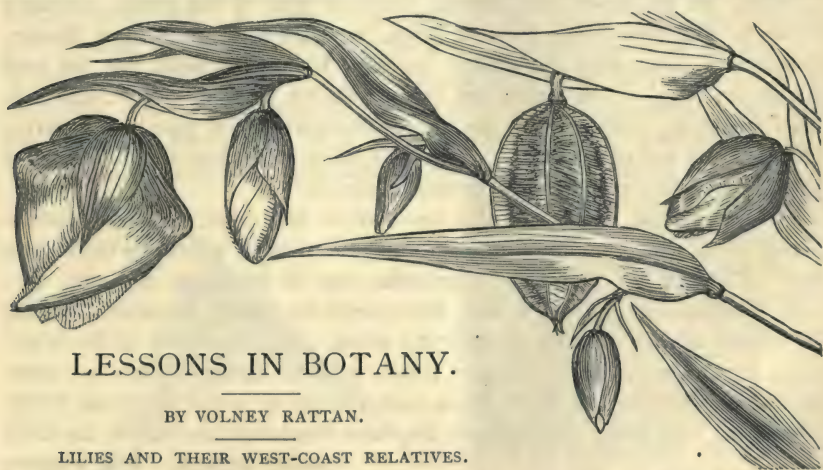
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LESSONS IN BOTANY.

BY VOLNEY RATTAN.

LILIES AND THEIR WEST-COAST RELATIVES.

LILIES are aristocrats among flowers. Of no others in Flora's kingdom could it so appropriately have been said, "They toil not, neither do they spin."

In their mountain homes, secure against the intrusion of the weedy horde that follows in the footsteps of man, they feast upon dustless air and pure water, unmindful of the struggle that is going on in the great hot valley where modest nemophilas, with dust in their blue eyes, are crowded off the highways by coarse vegetable tramps from the old world; where the native tar-weeds strive in an equal contest with foreign star-thistles for the possession of unguarded fields;

where *Eremocarpus* digs through depths of dryness for the staff of plant-life; where the miserly Big-root buries its hoard below the reach of farmers' plows; where Janus-faced *Orthocarpus* filches the hard earnings of its companions; where well-to-do families are impoverished by seedy relatives from the East; where, in short, plants, like men, work, fight, rob, beg, or steal, that they may exist. Lilies seem to say,

"Born were we to a higher life
Than one of work and ceaseless strife."

Yet they have near relatives among the humble workers of the valley.

The Pacific Coast is specially favored by the presence of many of the most beautiful members of the lily family. Of the thirteen true lilies known to grow in North America, eight are peculiar to this coast. The *Colochortus*, next to lilies the most showy of the family, number over thirty species, all belonging to the western half of the continent, and twenty inhabiting California. The genus may be known by the three broad petals, each bearing a pitted, usually hairy, gland near the base. One of the most charming species (*Calochortus albus*) is figured at the head of this article. The concave, incurving petals are white with hair-fringed edges. Another similar species (*C. pulchellus*) has golden-yellow flowers. Another type of the genus, popularly known as Mariposa lilies, butterfly tulips, etc., has stiffly erect open flowers. Intermediate forms have the flowers more or less nearly erect, but the pods usually drooping. The colors are various shades of blue, yellow, and red. Some are white, and all have the usually crescent-shaped gland of a darker color than the rest of the petals. This with other spots gives the butterfly-like appearance which suggested the common names.

The *Brodiaëas*, which are also peculiar to this coast, number fourteen species, all of which are found in California, and most of which are found here only. The cut on this page represents one of the most common species. Its color varies from a rich blue-purple to almost lavender. Taking this species to start with, let us study the genus. Split open one of the newly-expanded flower cups and compare it with *e* in the figure. There are three cream-colored anthers without stems, each backed by a pair of whitish wings. Alternating with these, and opposite the outer divisions of the flower, are three



smaller anthers. That which is to form the seed-pod (ovary of the pistil, *l* in the figure), sits in the bottom of the flower without a stem. These are the characteristics of *Brodiaëa capitata*. *Brodiaëa congesta* and *Brodiaëa multiflora* are similar in outward appearance. The former has, in place of the small anthers,

appendages like the wings of the large anthers in *Brodiaea capitata*, and the large anthers are wingless; the latter has these appendages entire (not split to form a pair of wings). Botanists say these species have three anthers, alternating with staminodia, which in one case are bifid, in the other entire.

In the figure *b* represents a single flower of *Brodiaea terrestris*. Imagine three or four such flowers, and as many buds or stemlets, one to four inches long, all growing from the end of a short stem which comes from the ground between a pair of slender, nearly cylindrical leaves.

The flower is seen laid open at *c*. As in the last two species, staminodia take the place of the anthers. Observe that their edges are infolded and the upper end notched. *B. minor* is nearly the same, but the stemlets of the flowers are shorter and more nearly equal in length, and the main stem is longer. In the former the ground stem is only one or two inches high; in the latter it is three to six inches high. *B. grandiflora* is similar, but usually larger in every way, and the staminodia are rounded at the end. A single flower of *Brodiaea laxa* is represented split open at *h*. Its outside appearance is similar to the last described, but it has six anthers, all alike, borne on short stems in two rows, and the young seed-pod is on a thick stem (stipe). The flowers are usually numerous, the nearly equal stemlets growing from the end of a stiff ground-



stem. *B. peduncularis* has smaller flowers, and the lower anthers are stemless. *B. Bridgesii* has the six stamens in one row. *B. Douglasii* has flowers like *B. laxa*, only they are broader at the base; the three upper anthers have their stems widening out very much where they grow fast to the flower-cup; and the flowers are in bunches almost as close or head-like as those of *B. capitata*. All these species have flowers similar in color to the first described. Two species with flowers similar to *B. laxa* in structure, but of a yellow color, grow in the northern part of this State and in Oregon, viz: *B. crocea* and *B. gracilis*. The former

is a foot or more high, the anthers with short stems; the latter is only a few inches high, the anthers on slender stems. The two remaining *Brodiaëas* have flowers like *B. laxa* in shape, only the divisions of the flower are longer than the united portion; the anthers are in one row, and the flowers are yellow or white. At *f* is seen two of the six divisions of the flower of *B. lactea*, a common species about Oakland; the flowers white. *B. ixioides* has usually yellow flowers, purple-tinged with brown veins, and the anthers have wing appendages.

All the *Brodiaëas* have solid bulbs about the size represented in the figure. These are eagerly sought after by hogs. The seeds are like those of onions.

If you find a bunch of rose-colored flowers in a head like *Brodiaea capitata*, on a long, twining stem, you may safely label it *Stropholirion*. A similar bunch of longer red or scarlet flowers you can set down as *Brevoortia*, sometimes called vegetable fire-crackers.

CULTURE OUTSIDE OF THE SCHOOLS.

SCHOOL teachers form the mass of the army engaged in the grand fight for the world's culture. If ours is not the place of the advance skirmishers of thought, or of the great generals that direct the intellectual march of each succeeding age, we are content to know that the mighty ranks of teachers must be depended on, like solid masses of infantry in any army, to do the main fighting and win the battle.

But for the very reason that we feel ourselves thus necessary to the struggle, we are liable to underestimate how large a share of the work for the world's progress must be done outside the schools. The exquisite product called culture is the result of training head and heart, not by books alone, nor merely by the watchful discipline of even the best of schools and universities, but also by the experience of life. No college diploma can confer this master's degree. The best even the university can do is to put the student in contact with the thought and feeling of the world, and set his living mind at the processes of absorption and assimilation. For the comparatively few who can enjoy the benefit of collegiate training, there are the many whom the common school attempts, in briefer time, to touch in some degree to the same high issues. Believing earnestly, as we do, that our schools may thus inspire their pupils with mental life—repelling, as we do, jeremiads like those of Richard Grant White—yet, who knows so sadly as we teachers the limitations of our work? We know that our pupils must be taught in classes of a size beyond the power of any teacher to teach well, and we know that the majority will leave school for life under fourteen years of age. What educational influences shall follow those undeveloped young people who have stepped out from the schools? A thousand agencies are at work—books in countless numbers and marvelous cheapness, the daily press, the pulpit, the lecture platform, the march of inven-

tion and material progress, the ennobling influence of free institutions and republican government—all are so many grand educational forces.

Yet none the less is it true, that a large proportion of the community do not know how to use these varied advantages. Even the very range of knowledge available discourages by its wideness. Look about you and see how many stand hungry in the midst of the feast. There are those who have missed school training—a narrow purse, a little heedlessness on the part of parent or child—and golden youth has slipped rapidly away; its lost opportunities to be mourned too late. Then, in the improvement of schools, those educated under the old regime feel themselves left behind. Many a mother sees, with a pang, that her children are growing away from her, and longs to share their advantages. Then there are the lonely people in uncongenial, dull regions, who look out at the stirring life of intellectual centers with the feeling of Mrs. Whitney's quaint heroine—"Such lots of good times in this world, and I aint in 'em!" And there are the busy people with keen, disciplined minds, but only fragments of time. Now, how to help these wishful ones to make the most of the opportunities they hardly know how to seize? And how to touch to like longing the careless crowds, who have, after all, indistinct yearnings for higher culture, were they only awakened? How to help them mingle with their daily work that thought on noble subjects which constitutes the true intellectual life?

Various attempts have lately been instituted to meet this need in some measure by social organization and stimulus. At least three societies in the United States are now actually doing an extended work of this kind. The "Society for the Encouragement of Studies at Home," centering at Boston, puts a limited number of pupils in communication by letter with teachers who direct their studies. The Ebell Society, for ladies, well known in Oakland and other places on this coast, is a town organization for social study in lines chosen by the different sections of the classes.

The Chautauqua Literary and Scientific Circle, of which I have been asked to speak to you, combines in a measure the methods of both of these societies—the individual help of the one, the social stimulus of the other—while it has also special features of its own. Though with twenty thousand members it cannot attempt extended individual correspondence, it yet reaches and encourages the isolated student by various helps. It lays down for his guidance definite courses of study, carefully selected from the bewildering mass of literature. It adapts these courses to different classes of students, by requiring in its general course only what is within the means and time of all, while making wider selections for those of higher attainments or more leisure. It fixes this reading in the memory, and secures regular study by written reports and memoranda sent by the student to a central office. To those who find encouragement in such recognition, it promises at the end of four years a certificate of faithful work. It prints outlines, abstracts, and other helps for mastering the prescribed subjects, and gives many hints on methods of successful study. It publishes a magazine, which serves both as an instructor and as a bond of union.

But besides this individual help, the C. L. S. C. also attempts, wherever possible, to utilize the force of social stimulus. Like the Ebell Society, it has its local associations. These, however, instead of being limited to certain classes, take in men and women, old and young, of every social grade and degree of culture. When even half-a-dozen people are pursuing a course of study together, their conversation will strike out fresh ideas and fix those already gained, while a division of labor is possible, by which each shall contribute some special research to the common fund of thought. The habit of informal topical recitation, now becoming prevalent in these circles, has a value that teachers well know.

The large circles in some of our towns have become intensely interesting. Essays, readings, pictures, lectures, travelers' description, illustration by apparatus, not only furnish an enjoyable programme, but also serve to bring out the lateral resources of the society in a degree that is a constant surprise. In the larger towns, gatherings for such exercises form the occasional relish, while the steady diet consists of more frequent meetings of neighborhood classes for drill, thus doubling advantages. It may be asked how this work differs from the ordinary reading-circle. Simply in this: that instead of depending entirely on the energy of some few individuals, whose loss leaves the society to sure death, each local C. L. S. C. is but a branch of a great tree; through it courses the vitality of the whole powerful organization.

For there is still another source of strength—an annual Assembly or Summer School. Indeed, the society is the child of the assembly. It takes its name from the great convention which meets each summer on the shore of Chautauqua Lake in Western New York. When Dr. J. H. Vincent—the foremost leader of Sunday-schools in America, and perhaps the world; the man who has done more than any other to lift their grade of study by the great international system of lessons, and by developing normal training of Sunday-school teachers—when Dr. Vincent selected Chautauqua Lake as a delightful and accessible spot for the National Sunday-school Assembly, who could guess the growth of that assembly in seven short years! It has never lost its character as a gathering of earnest Sunday-school workers of the United States, for zealous study in all methods of improving the quality as well as the quantity of that Sunday-school teaching, which, in the exclusion of the Bible from the common schools, constitutes the only religious and even moral training of a large proportion of the children—the future rulers—of this republic. But more and more the assembly has branched out into new educational lives, secular as well as religious. Chautauqua has become the meeting-place for such distinguished societies as the National Educational Association, and the Philological Society. It holds a six-weeks' teachers' retreat for the comparison of methods and display of apparatus. It has classes in ancient and modern languages, in various branches of science, in philosophy, and art; and it calls to its lecture-platform many of the most distinguished men of the nation. Here the C. L. S. C., Dr. Vincent's latest inspiration, sprang into life, and here each summer its members flock to the great Summer School to take in a year's supply of enthusiasm.

Much of the immediate popularity and the future promise of the C. L. S. C. are due to its being thus an outflowing of the great Chautauqua reservoir, with what might be called a hydrostatic force. It had not to make its way slowly from small beginning, like most enterprises, but had a great nucleus of students already roused and eager. Its summer meetings are not the timid effort of the C. L. S. C. alone, but are a taste of the great Chautauqua banquet. And it has for originator and president a man of wonderful organizing ability, undomitable philanthropic energy, magnetic personal power, and an experience in the possibilities of rousing people to united action equaled by few living men. With Dr. Vincent to lead, there will always be an army to follow.

The society brings, too, another element of power from Chautauqua. It is warmed by Christian faith—not dogmatism, we trust, but the faith in God and man which makes people helpful to each other, as well as humbly earnest for their own growth. While by no means a religious organization, but one to which every person is welcome, whatever his creed, yet it is the achievement of those who believe our nature to be three-fold—spiritual as well as physical and intellectual. It sees in each human being the child of a Divine Father, placed in that Father's universe to learn its wonders, not as a servant, but as an heir. With this inspiring motive, it appeals to each to cultivate every power with which he is endowed, and to help wake his brother to the same great inspiration.

The California Assembly held last year at Monterey was a new Chautauqua. Nor need we of the Pacific Coast blush for this latest member of the now goodly family of Chautauqua assemblies. Those of us who were so fortunate as to attend this first summer school, felt that we saw the beginning of a great work for the Pacific Coast. To those who were not there, I can speak of the valuable courses of scientific lectures, and the delightfully informal class-work, which filled our mornings for a fortnight; of the fine opportunities at the beach for the study of marine zoölogy and botany; of the historical and literary lectures which each evening turned the current of our thoughts into new channels. But it is only those sharing that pleasant and inspiring memory who can enter into its full spirit. They will recall with me the unconventional, friendly meeting with so many earnest workers for the advancement of education; the hopeful, happy light in the faces of our leaders; the free camp-life in which our scientific studies turned into a confidential talk with nature at her own fireside.

Wider plans are laid for next year. We hope for more class-work: for apparatus; for a preparation on the part of those attending which will warrant advanced instead of elementary study. We hope to hear again the admirable lectures of last year, and to find other leaders of thought and culture glad to further, by their presence and effort, this attempt to place such advantages within reach of the public. We hope our California Assembly may become, like Chautauqua, a table spread with a feast for all.

The rapid growth of the C. L. S. C. shows that it has met a real want. The roll of 700 members with which it begun swelled in a few months to as many thousand. The second and third year witnessed like additions; making the present membership over 20,000, in all parts of the United States, in the Terri-

tories, in Canada, and even in the Sandwich Islands. The California Branch, though later started, has surprised us all by its numbers and energy.

Our confidence in the permanent growth in usefulness of the C. L. S. C. arises not only from its present popularity, but from its real adaptation to the public need: first, in the threefold influence brought to bear, as I have described, by individual help, local association, and the great Corliss engine of a Chautauqua furnishing central power; and second, by an elasticity almost like that of vitality, allowing it to develop new forms and adaptations.

For instance, in a few years, after the foundation of the general course of reading has been laid, the special study feature will develop great variety. Each large town circle will have its sections: one pursuing classical history, or medieval, or English, or American; another some branch of science; another some art; another literature; yet all, bound together by the elementary course already pursued by all members, contributing to make certain central public meetings interesting by their varied programme.

Again, while higher grades of research can then be entered on by advanced students, those for whom even the present studies are a little too difficult will be reached by a preparatory course. There is, even now, such a programme arranged for the children of the families engaged in the C. L. S. C. work. For instance, for our *Merivale's History of Rome*, and our *Green's History of England*, which we all know suggest work enough for trained minds, there are substituted Miss Yonge's pleasant *Young People's Histories of Rome and England*. What child will not enjoy these perennial stories better for hearing them talked over in graver style by mother and father and the rest of the elders. I was pleased by a child's letter not long since, saying: "I am trying to learn all I can, so I study the C. L. S. C. preparatory books. My *big sister* is in the C. L. S. C. itself."

Study which draws families together, which links the child's pictorial ideas and the elder brother's or parent's maturer thoughts—is not such study a power adding to the wealth of family life?

So the C. L. S. C. may also soon arrange preparatory work, not for children, but for the class of people who, though of maturer years, have never gained an appetite for ordinary science, history or literature. Readers whose apology for a library has been palmed off on them by agents at the door, might enjoy writings of a higher grade than their weak novels or other trash, if wisely selected for them, and urged on their attention by society stimulus. Once enticed along this upward way, by books though valuable yet popular in style, graver and richer volumes might follow in due time. A society elastic enough to adapt itself to every intellectual grade, and bind all together by *some* common study, is what is needed, rather than one that admits only the select few of high acquirements.

Another capability of adaptation lies in the comparative independence of local associations. Not only will this enable each town or country circle to choose for itself, but our California Branch as a whole may introduce features specially valuable on the Pacific Coast. Thus, in the Monterey Assembly the programme was not at all restricted by the course of study followed the pre-

ceding year, but was largely devoted to studies of the peculiar fauna and flora of our own coast, and the naturalization of food-plants on our soil. Next year we hope to hear from more of our specialists in California. So we hope for scientific collections coming in from members in remote regions, who may find their isolation partly compensated by their unexplored field of research. And if our coast has special needs, as for instance, temperance work, a rise above the materialistic spirit so natural in a newly-developed country—greater unity of feeling among people scattered over so wide a territory—in these and many other directions the C. L. S. C. opens doors for those who have hearts for work.

Thus, our interest in the C. L. S. C. has the earnestness which belongs to a growing work. While we have no idea that there have not been mistakes in its methods, that criticism may not be directed toward many details; these imperfections denote no more than the roughness in the outer bark of a living tree—they will not prevent it from growing to nobler proportions.

Now, why is the C. L. S. C. brought before the Teacher's Association? Why are the teachers of our coast urged to join it and help on its work?

First, because teachers should be a force for advancing all general culture. "What is your Culture worth to *Me*?" was the striking subject of an oration before the Alumni of Dartmouth by one of our leading American authors.

He who has received a liberal education has incurred at once a great debt to the past and a great responsibility to the present.

Is any teacher so churlish as to say, "I do plenty of work now—more than I am paid for—in the effort to educate the children under my charge?" I will not believe any of us are so little in earnest in our profession—or to use the nobler word, our *vocation*, our divine calling. Our work for the general good is *not* done, if we can do more. The question is not, "What does my profession *require* of me?" but "What *opportunities* does my profession open to me?" And the teacher can *reach the community* as few others can. Each child in his school is his "open sesame" to a house; locked it may be to the minister, the lawyer, the tradesman, but opened gently to the teacher by loved little fingers. If it is sadly true, that this cordial intercourse between parents and teachers is not universal, is not that both the teacher's fault and loss? And our free-school system, by taking in the children of all classes, may make the teacher's acquaintance more general than any other.

From this reason, and his recognized position as an educational leader, the teacher is the very one to organize a C. L. S. C. Then, from being known himself to have had training, his suggestions will have the weight of experience. He can give many hints as to methods of study, which, presented with tact, will be gratefully accepted. And he can place within reach of the readers many plans and appliances for further advancement. Most people are willing to *begin* a little circulating library, if there is some one to select attractive books—two or three at a time. When any branch of science is the subject under consideration, many would be willing to contribute specimens, were there some one to classify and arrange. Then, the teacher might form the nucleus for library and museum, which would in time be of the greatest value.

It is not the one who *gives* these to a community that is the greatest benefactor, but he that stimulates to their collection and use by the community itself.

I have been led to think the more deeply on this opening for the teacher's influence, from a growing knowledge of California county or village districts. In our sparsely-settled State the isolation of these regions sometimes deprives them almost altogether of intellectual communication with the rest of the world; and from the state of lethargy thus induced there seems no one to rouse them unless it be the school-teacher.

It is not, however, only the benefit of the community that appeals as a motive to a teacher in working with the C. L. S. C., but also the benefit to *himself*. I do not speak so much of the direct value of being held to definite reading—though do not most of us need this? Granting that we all recognize the truth that a teacher must be constantly *growing*—assuming that all of us have plans for systematic reading—how many of us keep it up faithfully? There is a peculiar nervous tension in teaching that seems to demand rest—if not idleness, at least the relaxation of careless and unchosen reading. So the course of reading we had laid out for ourselves gets pushed aside for the haphazard volume or magazine. We think with a sigh of our past resolves—and re-resolve, and fail again. Will not the society stimulus hold us a little better to our plan?

I did not, however, intend to discuss the fact, that teachers may need stimulus for a definite course of reading as well as other people, but to notice that teachers need for their own sake more of intellectual mingling with others around them. The members of other professions meet in competition with adults—their peers. The teacher is shut up in his intellectual work to intercourse with minds less mature than his own. It is one of the great dangers of our profession that we may thus acquire a narrowness—an arrogance—which, indeed, is sometimes called the distinctive brand of the teacher. How can we better avoid it than by sharpening our wits against those of our neighbors in other walks of life?—observing, for instance, the view taken of the same points we are studying by those whose experience of life has been different? For example, take the study of history: Dr. Arnold, in the preface to his great *History of Rome*, speaks eloquently of the difficulty of entering into the real spirit of history unless one has been engaged in like transactions in his own day. "A statesman," he says, "may relate the political contests even of remote ages with something of the spirit of a contemporary; a soldier or a seaman can enter fully into the great deeds of ancient warfare"—the *least* a true historian can do is to "*feel as a man and a citizen.*" Now, in our own local C. L. S. C. I have again and again noticed the fresh interest communicated to our work by the realization from experience of different portions of the story by different members of the circle. A soldier of the late war gives to the military career of the Romans an entirely new distinctness. An old-time abolitionist traces the degrading influence of slavery in the downfall of the State. A gentle missionary sees with spiritual clearness the hard, arrogant, selfish side of the Roman character. An active housewife has the details of their home and

family life especially in view. A business man notices the Roman money-getting ability. An architect gives us measurements and calculations of their world-renowned buildings. Will it not shake us teachers out of our pedantry thus to learn, from students in other walks of life, views our closet studies would not so vividly have suggested? Shall we not be more *human*—more manly and womanly—for multiplying the points of contact with other lives?

For instance, we all may read Roman history by ourselves; but is it not more interesting when our friends are eager to discuss with us the character of Cæsar, the genius of Hannibal, the forms of the Roman commonwealth, the causes which led to the empire, the historical bearing of the growth and decay of the Roman republic on the bearing of our own nation?

Beside the advantage to the community and to himself, the teacher can find in the C. L. S. C. a third gain, in its reaction on his school work. Everything that improves the teacher improves the school; but especially this watching other minds will guide him in training the young minds under his care that are going out into just such varied walks of life. And reaching the older members of the family and community reaches also the younger. They will look forward to joining their elders. Many of the school pupils will be found ready even now to be drawn into the society—the older into the regular course, the younger into the preparatory; and thus the teacher may be helped to implant that taste for continued, life-long reading and study which every true teacher feels to be one of the most essential things gained in school. The school-training will be made less narrow by this branching out, and the pupil will not suppose the three Rs the main part of human knowledge. The fact that he sees the teacher pursuing study outside of school will widen his view of what is to be done, enlarge his plan of life. I have often thought that one great secret of the powerful hold on his pupil's lives that distinguished that king of teachers, Dr. Arnold of Rugby, was the fact that he was no mere teacher. Not only did his pupils feel an added force in the direct line of studies, classical or historical, to prove the knowledge that he was editing Thucydides or writing his masterly history of Rome, but still more their reverence for him as a *man* grew from their knowledge that he was a statesman and reformer, in living sympathy with the thinkers of his day, holding out one hand to England's boys, another to its men. And the wonderful influence then begun in their school days was retained and deepened by his habit of following them beyond their school-boy years into the wider interests of their maturity. One who reads his letters to his former pupils will gather new lessons as to the breadth of a teacher's work.

Does it seem a long way down from the wide influence of Dr. Arnold to the position of a country-school teacher? Yet the work is one. It was Dr. Arnold's rare teaching in a private school of less than a dozen pupils, in a country parsonage, that called him to Rugby and fame. He was the same Arnold in his less extensive, less known work. And, to clench this point, I do believe the teacher may find in the C. L. S. C. help in rousing his older pupils to work outside the school-room routine. And I think its best help to his pupils will be in leaving them under stimulating influence after the teacher

has gone. What teacher's heart has not ached to see some aspiring young mind lose its aspirations from the depressing narrowness of its surroundings? Here he may leave him in an organization which will help to sustain his flagging courage, and open to him fresh avenues. His feet once placed on this path, he will find companions and guides in the upward way.

To sum up, then: We find in the great need for true and general culture much work to be done outside the schools. We have hope from the various social organizations for study. Among them we find the C. L. S. C. touching the springs of action at many points by its individual help, its local associations, its great Assembly. We find its present adaptation to popular needs great, while it has also a vital adaptive power from which we hope much more. We lay it before the teachers, not merely because all matters pertaining to an educational association should interest them, but urging them to take hold of the work for its three-fold benefit to the community—to the teacher himself, and to his school work. We urge this specially upon our own Pacific Coast, where the needs are great, but where such a degree of interest has already been awakened that we may look for valuable results. We shall welcome you all to our membership, rejoice in the local circles you may found, and hope you will come to cheer us next summer at Monterey. We shall be glad to have you advise with the C. L. S. C. State Committee as to the time when the teachers of the State will be most free to attend the Assembly; and we think we may promise, if you will aid us by your presence and interest, that the session shall rouse in you a lasting enthusiasm for the possible future work of the C. L. S. C. upon the Pacific Coast.

THE ZODIACAL LIGHT.

ON almost any clear moonless night now this phenomenon may be noticed in the western sky. In the early part of such an evening, after the twilight has disappeared, a triangle of faint light will be seen extending up into the sky. Its base will be found about the place on the horizon where the sun disappeared, and may be of considerable, though of varying and somewhat indefinite width. It will taper upward, and gradually fade out about half way from the horizon to the zenith, although it has been observed extending through ninety degrees, and even entirely across the sky. Its edges are so indefinite that no two observers will agree as to just what its limits are. It is not generally noticed, because it looks so much like an extension of twilight that it is mistaken for that. But, as has been said, it is to be seen when the twilight has entirely disappeared, and its shape is so different that any one can distinguish it. It is found to lie along the ecliptic, that is, the sun's path in the heavens. The ecliptic is more nearly perpendicular to the horizon during the evening now than during the evenings of any other part of the year. A glance at any celestial globe, or at a terrestrial globe having the ecliptic marked upon it, will make this perfectly clear.

If such a globe be set for the 1st of March and for a northern latitude,

then turned over toward the west, it will be noticed at about eight o'clock that the ecliptic is nearly perpendicular to the horizon, and passes close by the zenith, the point in the sky directly overhead. As the zodiacal light always lies along the ecliptic, and is close to the sun, it is clear that about the 1st of March affords the most favorable evenings for its observation; it then extends farthest up into the sky. In the latitude of the north United States its path does not run directly toward the zenith, for the ecliptic never runs through our zenith, but to a point a little way south of that. In fact it extends up toward the noonday position of the sun in the longest summer days. The globe will also show that at an hour or more *before* sunrise the ecliptic is nearly perpendicular to the horizon, and hence rises highest in October. The zodiacal light is thus seen best in the early morning in October. Except at these seasons it stretches along the sky so near to the horizon that it is generally unnoticed. The present is, then, the most favorable time of year for evening observation of this curious phenomenon, and for several weeks any one may find it. It will not do to expect too close a resemblance to the cuts of the light usually given in our text-books. They make it more distinct, and with sharper outlines than it will be found to have in the sky, as well as too narrow or its ordinary shape. The cause of the zodiacal light is still uncertain. From its nearness to the sun, and its position along the ecliptic, its origin must be sought for about the sun. Kepler ascribed it to an atmosphere about the sun, and this view was generally held until Laplace showed that its observed limits were far beyond the point where centrifugal force would balance the force of the sun's gravity, and that it could not be an atmosphere belonging to and revolving with the sun in any such sense as our atmosphere belongs to the earth. Prof. Wright, of Yale College, has shown by means of the spectroscope that the zodiacal light is a *reflected sunlight*. But this does not determine the nature of the reflecting substance. It may be a cloud of gaseous matter, or possibly of small particles of solid matter, surrounding the sun and extending out upon all sides toward the earth's orbit. More probably it is due to immense swarms of meteoroids surrounding the sun, and thus reflecting its light to the eye.—*G. M. P. in Scientific American.*

BY THE SEASIDE.

BY GEO. GOSSMAN, A. M.

The sun shone softly o'er the sea
 The glow of day's declining,
 As we sat by a fisher's hut
 Each other's thoughts divining.
 The fogs came up, the waters rose;
 Sea gulls were loudly calling,
 When from your lovely eyes I saw
 The tear-drops fast were falling—
 SAN FRANCISCO, May 20, 1881.

I saw them falling on your hand
 When I before you kneeling
 Did drink them off that pallid hand,
 To which I knelt appealing.
 And now my body wanes away,
 And I have since been thinking,
 That I was poisoned by her tears,
 The tears that I've been drinking.

GAINING ATTENTION.

THE following valuable and pointed suggestions we find in an exchange, and commend their perusal to all teachers :

I.—HOW NOT TO GAIN ATTENTION.

By demanding it as a right.

By begging it as a great favor.

By scolding the scholar for not giving it.

Attention is not to be gained by special indulgence, or by rewards.

It cannot be secured by threats.

Hearing the lesson rather than attempting to teach it, will not be likely to gain attention.

Reading the lesson from a book will not fasten the mind upon it.

Endeavoring to teach truths which the scholar cannot comprehend will not secure his attention.

Presenting a confused combination of ideas will prevent the attention of the scholar.

The use of words not understood, or using words so inaccurately that they convey no definite idea, will not command the intelligent attention of anyone.

II.—HOW TO GAIN ATTENTION.

By telling the child something which pays him for giving attention.

By giving information in such a manner that the scholar will count it worth his hearing.

Interest the scholar in a subject, and he will cheerfully give attention.

Under some circumstances children are capable of vigorous and long-sustained attention. Nor can we find a better illustration of mental absorption than the schoolboy engaged in a match of cricket or football.—*W. H. Groser.*

The attention of children is not much under the control of the will, but depends upon the interest which they feel in the subject.—*Groser.*

Awaken the scholar's sympathy with the subject, and he will give earnest attention.

Excite curiosity in the mind, and cheerful, earnest attention follows.

Curiosity in children is but an appetite after knowledge. I doubt not but one great reason why many children abandon themselves wholly to silly sports and trifle away all their time insipidly, is because they found their curiosity balked, and their inquiries neglected.—*Locke.*

Bring distinctly before your own mind the well-known fact, that children delight as much in exercising their minds as their limbs; provided only that which is presented to them be suited to their capacities, and adapted to their strength.—*Dunn's Principles of Teaching.*

Be intensely interested in the lesson yourself, and you will interest scholars, and gain their attention.—*S. S. World.*

SOME INTERESTING CORRESPONDENCE.

[The following correspondence illustrates the interest that may be awakened in American history by means of good teaching. The letters were sent us about two months ago by Prof. George Kleeburger, principal of the Weaverville schools; and the inquirer is a little girl fourteen years old, in one of his history classes. With Dr. Benson J. Lossing every reader is well acquainted.—EDITOR JOURNAL.]

WEAVERVILLE, CAL., September 5th, 1880.

DR. BENSON J. LOSSING, Dover Plains, Dutchess Co., New York,

Dear Sir:—Having been told by my teacher, Mr. Kleeberger, that you are one of the best historians of the present time, I thought I would write to you and ask you something about Sir Francis Drake.

The other day, in my history class, some of the scholars said that Sir Francis Drake, when he started for home in 1579, went into San Francisco Bay, and others said he went into Drake's Bay. I would be very much obliged to you if you would be so kind as to write, and tell me whether he went into San Francisco Bay or Drake's Bay. In so doing you will confer a favor on a large history class in the Weaverville grammar school.

Yours truly, NETTIE W. YOUNG.

THE RIDGE, DOVER PLAINS P. O., DUCHESS CO., N. Y.

MY DEAR YOUNG FRIEND:—I gladly answer your question so far as I am able to, concerning Francis Drake in California (he was not then *Sir* Francis).

More recent investigations make it pretty clear that Drake entered both Drake and San Francisco bays. Turned back by cold weather from a northern exploration of the American coast, he entered a bay in latitude 38°, (Drake's Bay) where he landed his stores and repaired his ship. He remained on the coast a month, and explored the shores southward. It is believed he entered the "Golden Gate," and on the shores of San Francisco bay received special honors from the natives. He was visited by their king, clad in rabbit-skins. He was accompanied by his officers of state, clad in feathers. One of them bore insignia of royalty. Drake was asked to sit down, when the native men and women engaged in a lively dance. The king and his people desired Drake to become their monarch. The king, singing with the rest, placed a rude crown upon his head, and saluted him as *Hioh* (sovereign). Drake accepted the honor, and took possession of the country in the name of Queen Elizabeth, naming it New Albion or "New England." It was in honor of the great navigator and freebooter that the region of our Eastern States being within the same parallel with Drake's "New Albion," was called "New England," and was so recorded in Captain Smith's map.

I think you may fairly accord to Drake's Bay the honor of Drake's first

landing-place on the shores of California, and to San Francisco Bay the honor of his coronation as king of "New England."

I am glad to observe young people anxious to be exact, especially in the determination of facts concerning the wonderful history of our beloved republic. Every American girl and boy should study that history carefully, so as to become intelligent citizens, for girls, as well as boys are citizens.

Your friend, BENSON J. LOSSING.

MISS NETTIE W. YOUNG, Weaverville, Cal.

WEAVERVILLE, CAL., Oct. 19th, 1880.

DR. BENSON J. LOSSING, Dover Plains, New York,

Dear Sir:—As you was so kind as to answer my letter concerning Sir Francis Drake, I take the liberty to write to you again, and *this* time about the relative ages of Tucson and St. Augustine. We always thought that St. Augustine was the oldest until we saw a message in the paper from the Mayor of Tucson, stating that the new railroad had reached Tucson, the oldest city in the United States. We wrote to the Mayor of Tucson, asking him if he would please be so kind as to write and tell us what authority he had for saying that Tucson was the oldest; but he did not condescend to answer it. I am glad he did not, as it is the means of my writing to you, and whatever you say I shall believe.

Yours truly, NETTIE W. YOUNG.

THE RIDGE, DOVER PLAINS, N. Y., Nov. 8th, 1880.

MY YOUNG FRIEND:—St. Augustine is the *oldest* city in the United States. Tucson (or Tuxon, as the Spaniards write it) is one of the *youngest* cities in the Union, having been incorporated in 1871.

There is no evidence that Coronada ever saw the pueblo of Tucson, for it lay south of his route from the head of the Gulf of California. He and Ruiz and Espejo all crossed the Gila a little west of the 112th degree of longitude west from Greenland. Tuxon was not one of the so-called "Seven Cities of Cibola," which were known to the Spaniards ten years before Coronada's expedition. They were *north* of the Gila, while Tuxon is *south* of it, in the Santa Cruz, and at about the 111th degree.

A century before that region became a possession of the United States, Tuxon was a ruined pueblo, partly rebuilt by the Spaniards. It was a Mexican military post, when, by the "Gadsden purchase" in 1853, it became the property of the United States. Yours respectfully, BENSON J. LOSSING.

MISS NETTIE W. YOUNG, Weaverville, Cal.

Knowledge does not comprise all that is contained in the large term education. The feelings are to be disciplined, the passions are to be restrained, true and worthy motives are to be inspired, a profound religious feeling is to be installed, and pure morality inculcated under all circumstances. All this is comprised in education.

BLOCK EXERCISES.

PRIMARY CLASSES.

TEACHERS (who are not kindergarteners,) who have charge of the lowest primary classes, will find blocks a great aid in employing, interesting, and instructing the little ones.

Furnish each child with a stout bag containing eight cubes, and one square prism three times the length of a cube. Cubes one and a half or two inches square, are a very good size. These blocks may be obtained, with slight expense, from the carpenter. The bag can be made by the older children.

Have the children stand up their long blocks, and point to the front, back, right and left-hand sides, top and bottom of them. When this is well understood, have them place two blocks in front, two back, two on right and left-hand sides of said blocks; then have them take out the long blocks, and ask what they have made. If no idea is suggested to them, tell them to call it a well, which they will be pleased to imagine. Then a conversation may follow concerning wells. How many have seen wells, and where? What is found in them? How is the water obtained? Where does the water come from? Uses of water, etc.

When this subject is exhausted, have them take away the two front and the two back blocks, and lay the long blocks across the remaining blocks, when a bridge will be found.

Another conversation may now follow concerning the materials used in building bridges—their uses; what found under them; what found in the water; how fish are caught; kinds of fish, etc.

Two blocks may then be placed under the bridge and a wall is suggested. Let the children tell all they know about that, and then add to their information. The long block may then be taken off and placed in front, at the base of the wall, when a settee will appear, and thus these exercises may be continued almost *ad infinitum*. If the children are old enough, reading, spelling and regular object-lessons may accompany them.

Arithmetic may also be taught with the blocks. An inventive teacher will find many ways to use these blocks with pleasure and profit; for little hands need constant employment.

The children cannot fail to be interested in these exercises, and will gain many ideas from them.—*New York School Journal*.

THE true spirit of religion cheers as well as composes the soul. It banishes indeed all levity of behavior, all vicious and dissolute mirth; but in exchange fills the soul with a perpetual serenity, uninterrupted cheerfulness, and an habitual inclination to please others as well as to be pleased by others.

THE C. L. S. C.

This department is under the editorial charge of MISS L. M. WASHBURN, San José to whom all communications relating thereto must be addressed.

THE second Summer Assembly of the Chautauqua Literary and Scientific Circle will be held at Pacific Grove, near Monterey, California, opening with an address on Tuesday evening, June 28th, 1881, and closing July 13th.

This Assembly is partially modeled after the famous Assembly held each summer near Chautauqua lake, N. Y.

Like that, and other summer schools of science and philosophy, it aims, in the season of summer vacations, and associated with the pleasures of camp-life, to bring within popular reach many of those advantages for culture, that, during the greater part of the year, are to be found only at the universities. The value of our Pacific Coast Assembly was well assured by the delightful opening session of 1880. It is hoped that all persons interested in the advancement of general culture, will, by their sympathy and presence, assure not only its permanence, but also its large development.

The unexampled facilities at Pacific Grove for studying the animal and vegetable life of the sea coast, have determined Natural History as the leading topic of study. Courses of lectures and class exercises will be given as follows:

Dr. J. H. Wythe, of Oakland, Biology; especially Marine Zoology, with use of the microscope; Dr. C. L. Anderson, of Santa Cruz, Marine Botany, with excursions on the beach, and illustrations from his own collections of Algæ; Miss M. E. B. Norton, of the State Normal School, San José, Phenogamic Botany, class-room and field lessons, with illustrations from her private herbarium and analysis of local flora; Prof. J. G. Lemmon, the noted explorer and California botanist, will also give one or two lectures, probably on the Plants of the Sierra and Pacific Coast Ferns; Prof. H. B. Norton, of the Normal School, Economic Entomology, especially in relation to the fruit pests of the State.

Besides these extended courses, the following speakers are expected to give one or two lectures each on the subjects named:

Prof. Bernard Moses, of the University of California, Literary History; Prof. Ira More, of the Normal School, The Aryan and the Semite, and Hannibal; Mr. F. B. Perkins, Librarian of the San Francisco Free Public Library, and for many years in charge of the Boston Free Public Library, on Libraries, and How to Use Them; Prof. J. N. Martin, University of the Pacific, Latin Literature; Prof. T. C. George, University of the Pacific, The Spectroscope, with the instrument; Prof. C. W. Childs, Normal School, American History; Mrs. Mary H. Field, of San José, American Literature; Rev. C. V. Anthony, of San Francisco, Psychology; Dr. C. C. Stratton, President of the University

of the Pacific, and President of the C. L. S. C., Schlieman and his Trojan Explorations, and The Revision of the New Testament.

Other lecturers hope to be present if their engagements permit; among them, Prof. Joseph LeConte, University of California, Geology; Prof. J. B. McClesney, Oakland high school; Antoinette Buckel, M. D., of Oakland, Hygiene; Dr. Saxe, of Santa Clara, The Sandwich Islands.

Preaching may be expected both sabbaths by some of the leading clergymen of the State.

The lecturers give their time and labor gratuitously. The Society, however, engages to pay their traveling expenses, and for this purpose, and for the minor incidentals of printing, etc., a fee of two (\$2) dollars will be charged for the two week's course. Single day tickets will also be issued. For this nominal price all the advantages of the course will be open, not only to members of the C. L. S. C., but to all persons choosing to attend.

The Southern Pacific Railroad Company, now the owners of Pacific Grove, are erecting a permanent building for the use of the C. L. S. C. The lecture hall will be supplemented by two-class rooms, fitted with shelving for Natural History collections, and an Herbarium of California and Pacific Coast flora.

Members of the C. L. S. C. who cannot be present at the Summer meeting, are earnestly solicited to contribute to the collections, dried plants, minerals, or geological specimens, and illustrations in all departments of zoölogy. We wish to gather here a full representation of the life of the Pacific Coast.

Books, including the California Flora, by Prof. Volney Rattan, pocket lenses adapted to botanical and zoological work, vasculums for collecting, plant presses, and other materials for work in Natural History, can be obtained on the grounds.

Pacific Grove is a charming camp-ground, on the shore of the bay, two miles distant from Monterey. Communication is made with the S. P. R. R. depot by livery teams. Cottages and tents are rented to those who do not prefer bringing their own tents; and there is a restaurant on the premises. The Railroad Company have lately refurnished the cottages and provided new tents. The prices, however, will be as low as under the former management. Tents may be rented, furnished, at from \$4 to \$9.50 per week, ranging in size from 10x12 to 12x24 feet. Lodging in cottages, \$5 per week; for two in one room, \$6. Board at the restaurant, \$6.50 per week, or three meal tickets, \$1.25. It will be advisable, however, for all who can, to bring their own camp equipage, as the grounds may be crowded during the Assembly. To this end, the S. P. R. R. will, in addition to checking the ordinary 100 pounds of baggage, also way-bill, free of charge, tents, and camp equipage of all kinds, though not provisions. A grocery upon the grounds is a great convenience to campers. Further particulars may be learned by addressing Mr. J. O. Johnson, manager of the Pacific Grove. Special round trip tickets, (good from June 1st to September 30th) can be obtained at any of the stations of the Central Pacific, Southern Pacific, California Pacific, at reduced rates.

The well-known character of Pacific Grove for order and morality will be maintained. No spirituous liquor will be sold, nor will gambling or sabbath

desecration be allowed. In short, families may come for the delights of free camp-life, united with pleasant society, and all the advantages of the Summer Science School.

EDITORIAL DEPARTMENT.

A THOUGHT ON EDUCATION BY THE STATE.

IS it true that a decrease in crime is consequent on a general advance in intelligence? We believed so. We believed as well that this was not now a debatable question; that it is as firmly settled as Kepler's laws of motion, or Newton's doctrine of universal gravitation. But to judge by the controversy going on throughout the Union, we must admit either that there is no necessary relation between ignorance and crime, or else that there is a class so favored by nature, so sensitive to ameliorating influences that on them alone education may exercise an elevating tendency, may purify them still more from grosser influences, and separate them still further from the baser clay of the rabble.

Hypercritical critic, plutocrat, aristocrat, sectarian, priest, and preacher, by word and pen seem so to say; and their speech translated into plain English is: Education is good, but not for the many; it is for the few—the chosen. The masses should approach the temple of learning as of old the neophyte entered the fane of the Eleusinian mysteries: the feet of thousands pressed the portico—only a handful were found worthy of communion with the divinity. Or, more aptly still, our modern opponents of liberal culture for the many, hold with those narrow sectaries, that they alone are the chosen few to enter the kingdom of heaven, and that for the myriads of mankind besides is only torment everlasting. What else can we conclude from the wearisome iterations and reiterations about over-educating the masses?

The questions seem clear enough. Is education good? Will it prevent crime? As the main function of government is simply to protect all men in doing that which will best conduce to their own happiness—that is, to prevent any one man from infringing on the perfect liberty of any other—so government must do uniformly for all what all are not certain to do for themselves. A knowledge of the nature of man, four thousand years of authentic history, have shown that the individual man cannot be trusted with the education of his own offspring. It is only by the aggregation of individuals that enough power is attained to develop and perfect schemes of complete mental or moral culture. This is why the state undertakes the process of education. As to the extent of this educa'tion, we claim that the system must necessarily be as broad as the limits of modern culture itself. As the state educates, it must be either "All in all, or not at all." To do less, would destroy the very corner-stone of democratic government. For the state to undertake a system of education, beginning and ending with the mere elements of knowledge, with barely the key to culture, would be to lend its aid to the creation of a privileged class—a class reputable, not by reason of great achievements in their own generation or in their ancestors', but distinguished solely for the accident of wealth.

The State as an educator occupies a competitive relation to private enterprise. It must furnish the best, both in the subjects taught, and in its teaching force; otherwise, the very ends of its design would be defeated. The few would become richer, more learned, more exalted; the many, poorer, more ignorant, more degraded.

The history of civilization shows us that all progress, whether in art, or science, or literature, in religion, or morals, or social condition, has been the development, the outgrowth of an entire nation or period. In fact, so the student of history reads, great men themselves are not phenomenal; they have no resemblance to the meteors darting athwart the summer night, and lighting up its darkness to rival noonday splendor. They are simply the product of the masses—the type of a spirit and idea which pervades the many—greater here, because incarnated in the individual.

So with education by the state. Its value is that it places the body of the people to-day where the few were a century ago.

In strong contrast with our American pessimists, who believe popular education a failure, is the action of European governments. Italy and Spain are making more and more liberal provision for the culture of the masses. France is emulating the nation hitherto esteemed the most advanced in the world in its wise plans for the training of its citizens. And England is following closely in our footprints; nay, more, is actually leading us in many respects. One of her ablest scientists embodies all we have said, and all the experience of the centuries, in this one pregnant statement: "A complete system of education should be like a ladder reaching from the gutter to the university."

NATIONAL EDUCATION.

PROGRAMME OF THE NEXT MEETING OF THE NATIONAL EDUCATION ASSOCIATION AT ATLANTA, GA.

WE have obtained from Hon. J. H. Smart, president of the Teachers' National Educational Association, the programme of the annual meeting of the association, which meets at Atlanta, Ga., July 19, 20, 21, 22. It will be seen that the subjects to be discussed are of importance, and that the men selected to speak are among the most prominent educators in the country.

The programme is as follows:

Twentieth annual meeting of the National Educational Association, to be held at Atlanta, Ga., July 19, 20, 21, 22.

TUESDAY, JULY 19—MORNING SESSION.

Address of Welcome. Hon. Alfred H. Colquitt, Governor of Georgia.

Inaugural Address, by the president of the association, Hon. J. H. Smart, Indianapolis, Ind.

Paper: Line of advance. Prof. C. C. Rounds, president of Maine Normal School.

Paper: What shall we teach in our elementary schools? A. J. Rickoff, LL. D., superintendent of schools, Cleveland, O.

AFTERNOON SESSION.

Department of elementary schools.

President's Address. O. V. Tousley, superintendent of schools, Minneapolis, Minn.

Paper: The philosophy of illustration. Hon. J. J. Burns, ex-State commissioner of schools, Columbus, O.

Paper: Education of the sensibilities. John W. Dowd, superintendent of public schools, Toledo, O.

Paper: Scientific Education. Hon. Charles L. Loos, member of State Board of Examiners, Dayton, O.

EVENING SESSION.

Address: Education and the building of the State. Hon. John Eaton, United States Commissioner of Education, Washington, D. C.

WEDNESDAY, JULY 20—MORNING SESSION.

Paper: Some essentials in the development of a school system. Hon. D. F. DeWolfe, State commissioner of schools, Ohio.

Paper: The teacher's work in the development of mental power. N. A. Calkins, LL. D., assistant superintendent of New York city schools.

Paper: A proposed revision of the common school curriculum. Hon. M. A. Newell, LL. D., superintendent of schools, Maryland.

AFTERNOON SESSION—DEPARTMENT OF HIGHER EDUCATION.

President's Address. Rev. Lemuel Moss, D. D., president of Indiana State University.

Paper: The study of political science in colleges. J. W. Andrews, LL. D., president of colleges, Marietta, O.

Paper: Motive power in the building of institutions. Hon. D. P. Baldwin, LL. D., Attorney-General of Indiana.

Paper: Rev. H. H. Tucker, D. D., LL. D., Atlanta, Ga.

EVENING SESSION.

Paper: The necessity for spelling reform.

Address: Is the same system of common school education possible in all the States? William C. P. Breckinridge, Esq., Lexington, Ky.

THURSDAY, JULY 21—MORNING SESSION.

Paper: Moral and literary training in the public schools. John B. Peaslee, LL. D., superintendent of city schools, Cincinnati, O.

Paper: The effect of student life on the eyesight. A. W. Calhoun, M. D., Atlanta, Ga.

Paper: Popular education the condition of National success. Hon. James W. Patterson, LL. D., superintendent of public instruction, New Hampshire.

AFTERNOON SESSIONS—DEPARTMENT OF NORMAL SCHOOLS.

Paper: Normal principles of education. Prof. James Johonnot, Ithaca, N. Y.

Paper: What constitutes a normal school? Prof. J. C. Gilchrist, president of Iowa State Normal School.

Paper: The best normal training for country teachers. Prof. T. C. H. Vance, editor *Eclectic Teacher*, Lexington, Ky.

Paper: The best moral training for city teachers. John Kennedy, New York city.

EVENING SESSION.

Lecture: An evening in wonderland. Wm. T. Marshall, Springfield, Mass.

FRIDAY, JULY 22—MORNING SESSION.

Paper: Prof. Louis Soldan, principal of City Normal Schools, St. Louis, Mo.

Paper: The leading characteristics of American systems of public education.
Hon. J. P. Wickersham, LL. D., ex-State superintendent public instruction, Pennsylvania.

Paper: The lessons of the international educational congress at Brussels.
Wm. T. Harris, LL. D., St. Louis, Mo.

AFTERNOON SESSION—DEPARTMENT OF INDUSTRIAL EDUCATION.

Paper: The need of a system of special technical schools. Hon. S. R. Thompson, State superintendent of public instruction, Nebraska.

Discussion of paper.

Paper: The decay of apprenticeship; its causes and remedies.

NOTES.

During the session of the association, a printed report on the "Relation of Education to Crime" will be presented by a committee, of which Hon. J. P. Wickersham is chairman.

Senator Jos. E. Brown, and Hon. Alex. H. Stephens, and President Garfield have been invited to attend the meetings of the association.

The Board of Directors will meet at the Markham House on Monday evening, July 18.

The National Council of Education will meet on Monday, July 18, at two o'clock P. M.

The International Spelling Reform Association will meet on Monday, July 18, at ten o'clock A. M.

OLD DIPLOMAS.

DIPLOMAS belonging to the following graduates of the State Normal School have awaited their owners for a long time—some for many years. Readers of the JOURNAL who know the whereabouts of the persons named, will confer a favor by notifying them of the document awaiting their order.

L. J. Megerle, Mary F. Metcalf, Sabrina A. Williams, Maria O'Connor, Mary T. Morgan, C. Mattie Chapman, Mary Perkins, Frances Simon, Cloelia M. Lewis, Almira C. Flint, Emma Bigsby, Lizzie A. Morgan, Joseph F. Kennedy, Ida C. Wright, Adrianna L. Beers, Flora C. Smith.

BOOK NOTICES.

THE review of a number of valuable books is necessarily deferred to our July issue, on account of the pressure of important official matter in this number. We regret any delay in this book department, as we propose to make it a ready and valuable means of reference for District Boards of Trustees who contemplate increasing their libraries.

TO TRUSTEES, SUPERINTENDENTS, TEACHERS.

THE attention of all school officers is earnestly invited to the official department in this and preceding numbers of the JOURNAL. It is contemplated by the law that all the trustees shall have access to the JOURNAL and that it shall then be placed in the School Library and bound at the end of the year.

All school officers will readily perceive how valuable will be the collection of decisions on educational matters, comprised in even a single volume of the JOURNAL. Trustees will please bear in mind that they are not required to subscribe for the JOURNAL; it is subscribed for and ordered sent to every district in the State, by order of the State Board of Education, acting under authority of subdivision 12, section 1521 Political Code. The payments are made by the county superintendent. The JOURNAL has been issued for some time past about the fifteenth of each month. Commencing with August, it will be issued promptly on the first. Trustees who fail to receive the current number before the fifth of the month, will please notify us promptly.

A GRATIFYING RESULT.

OUR readers are aware that some time ago the "sand lot element" in Santa Cruz set out to destroy the excellent high school there. Securing the control in the Board of Trustees, they put every obstacle in the way of Prof. Anderson (who had created one of the best of high schools) and finally harassed him into resignation. But, when he resigned, his three high school classes followed, and the more intelligent, the best people of Santa Cruz, became deeply indignant.

The annual election approached: the issue was clearly drawn—high school or no high school—Anderson or no Anderson.

We have the result just at hand. By a vote of more than two to one, the people decide in favor of a first-class man, at a first-class salary, to conduct a first-class school.

CLOSING EXERCISES OF OUR COLLEGES AND SCHOOLS.

LACK of space compels us to defer the account of the commencement exercises of our schools till our next number. As stated elsewhere, the July JOURNAL will appear about July fifth, and all succeeding numbers promptly on the first of the month.

The excellent article on CULTURE OUTSIDE OF THE SCHOOLS in this number of the JOURNAL is by Miss L. M. Washburn of the State Normal School, San Jose. It is the paper read by her at the last meeting of the State Association of Teachers, and aroused such interest, that a general desire was expressed for its publication in full.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

County, May 9th, 1881.

HON. F. M. CAMPBELL:

DEAR SIR—The boundary lines of the districts of this county are in a disgraceful condition. There is no transcript in this office, nor has there been one for ten years. It is an utter impossibility for me to make such a transcript without the aid of a professional surveyor. I have applied to the Board of Supervisors for an appropriation to enable me to procure such aid. They, on the advice of the District Attorney, declined to appropriate anything, saying that no authority could be brought or shown to sanction an action of this kind.

Will you not get a written opinion from the Attorney-General as to the powers of the board in these premises? The District Attorney desires the Attorney-General's opinion:

1. Can the board order an expert to make the transcript and allow him pay?
2. Can they allow me clerk hire, thus enabling me to procure assistance?
3. Can they make an appropriation for this purpose, and direct me to expend the same?

County Superintendent.

OFFICE OF THE ATTORNEY-GENERAL OF THE STATE OF CALIFORNIA,
Sacramento, May, 22nd, 1881.

HON. F. M. CAMPBELL:

DEAR SIR—Under subdivision two of section 4046 of the Political Code it is the duty of the Boards of Supervisors of the several counties of this State to divide the counties into school districts, and to change such districts as convenience may require, and by the twenty-fifth subdivision of the same section such boards are authorized to do all things which may be necessary to the proper discharge of that duty. If in order to accomplish the purposes of the law, it becomes necessary for the board to make a survey, a surveyor may be employed for that purpose. Such matters, to a great extent, address themselves to the discretion of the board.

The division should be made by order of the board, and the fact of division, together with an accurate description, should be entered upon the record.

If, however, the boundaries as entered are conflicting, or incorrectly described, the county superintendent may be required by the board to correct the descriptions upon the record. The work of the superintendent in such cases, however, consists simply in a correction of the record descriptions so as to make them harmonize or conform to the truth. Such work does not ordinarily require the assistance of a surveyor, but if in finding the boundaries described, or in establishing boundaries, the board deems it necessary, it may order a survey and employ a surveyor.

Section 1549 authorizes the board to allow a deputy to county superintendents, payable out of any money not otherwise appropriated, except the money in the school fund.

Respectfully yours,

A. L. HART, Attorney-General.

Particular attention is directed to the construction given by the Attorney-General in the foregoing opinion to section 1549. It has very generally been held heretofore, that the section operated to prevent entirely the payment of an assistant or deputy to the superintendent. In a number of the larger counties, where the increased duties of the superintendents were so great that their proper discharge has been almost, if not quite, a physical impossibility, the superintendents have been deterred solely by this section of the Code from providing the assistance so manifestly necessary.

Now that it can be done upon so high an authority as that of the Attorney-General of the State, it is confidently hoped that assistance will be allowed when it seems necessary for the efficient discharge of the duties of county superintendency, upon which the success of our present school system so largely depends. The section referred to reads as follows: "Section 1549. Each county superintendent may appoint a deputy, but no salary, *payable out of the school fund*, must be allowed such deputy."

SACRAMENTO, May 5th, 1881.

—, ESQ., *Clerk of* — District:

DEAR SIR—Yours of the 26th ulto. is before me. I fear that I have not a sufficiently clear understanding of all of the details to enable me to give a reliable opinion. Your statement of the case is, that in 1878 "A" district contracted a debt; that in the same season "B" district was divided from "A" district; that in 1879, a year after the division, the trustees of "A" district notified you of the debt, which you declined to recognize as a valid claim upon "B" district. That in the spring of 1880 "C" district was also divided, (you did not say from what district, whether from "A" or "B,") and that nothing was said of the debt until a short time ago, etc., etc."

This makes a very complicated question for me to arbitrate upon at this distance, and with the limited knowledge of which I am in possession, and a still more difficult one for me to decide as a legal proposition. Section 1582, Political Code, provides that the school superintendent must, when a new district is formed by the division of an old one, *after payment of debts*, divide the money, etc. This would seem to limit the power of the superintendent to consummate the division of a district to such a time as the funds to the credit of the district are sufficient to pay the debts of the district. If a district should be divided without funds to clear off indebtedness, equity would seem to require that both the old and the new districts should assume a fair proportion of it. As I said before, this particular case is exceedingly involved, and there are undoubtedly equities on both sides, or rather, I should say, on all sides, for it seems to be a sort of triangular affair. It is greatly to be desired that an understanding should be had and a settlement agreed upon satisfactory to all concerned, without recourse to the courts through a lawsuit, with all the attendant expense of time, money, and good fellowship. To this end, could you not all agree to leave the matter to arbitration, giving all sides a chance to be fairly heard, the superintendent in the meantime delaying any action in the premises?

Hoping to hear that an amicable adjustment has been reached, I am,

Very truly yours,

FRED. M. CAMPBELL,

Superintendent of Public Instruction.

The following from the Attorney-General is in reply to a letter from the clerk of "C" district upon the same question: ("C" district had been formed by the division of "A" district.)

SACRAMENTO, May 23rd, 1881.

SIR—In answer to the question put in your letter, I have to say, that when a new district is formed by the subdivision of an old one, the school superintendent should pay the debts of the old district out of the money on hand to the credit of the old district. There is no law making the new district thus formed liable for any part of the debts of the old district.

Section 1582 of the Political Code provides, that when a new district is formed by the division of an old one, the school superintendent must, *after payment of debts*, divide the money to the credit of the old district at the time the school was first opened in the new district, and such as may afterward be apportioned to the old district, according to the number of children in each district, for which purpose he may order a new census to be taken. There is no provision of law which makes the new district liable to pay the debt, or any part of the debt, of the old district.

Respectfully,

A. L. HART, Attorney-General.

In joint districts, that is, in districts lying partly in each of two or more counties, the *census marshal* should report to each county superintendent the *whole number* of census children in the district, and also the number of such children in the county of which the party to whom the report is made is superintendent. This is necessary, that the superintendents may properly apportion the school moneys to such districts in accordance with section 1583, Political Code.

To the end that a proper pro rata apportionment may be made in accordance with subdivision fourth of section 1858, *teachers* should report to each superintendent the average attendance and other statistics of those pupils only who reside in his (the superintendent's) county.

Superintendents must include in *their* reports to this office the statistics of those pupils only who reside in their respective counties.

The following is in answer to a CENSUS MARSHAL, who wrote asking if he should include in his report all the inmates of an orphan asylum which is located in his district.

Section 1637, Political Code, specifies those whom the census marshal *must* include in his report as follows:

"He must include in his report all children (whose parents or guardians are residents of his district,) who are absent attending institutions of learning."

Section 1638 states who are *not* to be included, as follows:

"He must *not* include in his report children who are attending institutions of learning, or such benevolent institutions as deaf and dumb, blind, *orphan asylums*, in his district, but *whose parents or guardians* do not reside therein."

From these two sections it is clear that you are not to include in your report *all* the children who are in the orphan asylum which is located in your district, but those only whose remaining parent (if half orphan) or guardians (if they have any) reside in your district. The others will be included in the reports of the census marshals from whose districts they came to the institution, and in which the remaining parent or guardians reside.

For statistical purposes, the inmates of these asylums will all, or nearly all, be thus included in the school census enumeration of the State, and without the injustice which would result from following any other course.

If they were all included in your report, it would be an advantage to your district by the increased amount of State and county school moneys which your district would draw; but as the funds to be divided per capita would not be increased, the advantage you would gain would be only at the expense of the other districts of your county.

During the debates in the last Legislature upon the school-tax question severe criticisms were passed upon our school census returns, and their correctness openly and frequently questioned and denied. While much that was said had no foundation in fact, it cannot be denied that great looseness concerning them has prevailed in many places, nor that in others open fraud has been perpetrated, for it has been discovered and exposed.

In a certain district in which some two hundred and thirty or more children were returned for several years, there were in fact, as was shown by a retaking of the census by a new superintendent, less than a hundred. Out of the money thus dishonestly obtained the trustees were able to pay several thousand dollars for a school-house, and this at the expense of other districts whose affairs were honorably administered, and in which it was a struggle to maintain a school for the time necessary to entitle them to their apportionment of State and county funds.

It is earnestly hoped that each and every superintendent will exercise the utmost vigilance to not only detect every attempt at fraud, if any should be made, but also to guard against mistakes.

Probably one of the most fruitful sources of errors is the liability of marshals to encroach upon the territory of other districts, thus leading to double enrollment. To guard against this, superintendents should, before making up their own summaries, carefully compare the names found upon the census rolls with those of adjoining districts. Let us all endeavor to have this year a report upon the correctness of which all may rely. To this end superintendents should not hesitate to avail themselves of the provisions of subdivision fifth of section 1636, as passed by the last Legislature.

How can UNION DISTRICTS, that is, districts lying partly in one county and partly in another, be now formed? This is a question quite frequently asked, and sections 1583 and 1635 are referred to as anticipating the organization of such districts. I have replied to these letters, explaining that under the old Constitution such districts were formed by special legislative enactment. That no special law can now be passed, and the Legislature has failed to pass a general law providing for the creation of such districts.

Section 1635, concerning the duties of census marshals in such districts, remains as it was before the adoption of the new Constitution, and section 1583 was added to the law to meet the requirements of the new organic act concerning text-books, etc., in the union or joint districts already formed. I have suggested that, where the educational necessities of the children of any locality seemed to demand the organization of such a district, perhaps it could be accomplished by the mutual consent and favorable action of the superintendents, district attorneys, and boards of supervisors of both counties.

The following is in answer to a letter of inquiry upon this subject from a county superintendent:

SACRAMENTO, May 22nd, 1881.

DEAR SIR—I find no authority under the laws now in force for the formation of new school districts lying partly in each of two different counties. Section 1635 of the Political Code relates to the management of those already formed.

Respectfully,

A. L. HART, Attorney-General.

CONCERNING DIPLOMAS.—Much delay and unnecessary correspondence will be avoided by applicants and superintendents observing carefully the following details:

1st. The certificate upon which the diploma is asked must in all cases accompany the application. The records of the office cannot be complete without the data which the certificate alone can furnish. It will be returned with the diploma, or, if required for use before the diploma is issued, it will be returned upon application.

2nd. The full first Christian name of the applicant should be given. Much confusion has several times resulted from issuing diplomas and using only initials.

3rd. The name of the applicant should be plainly written in the resolution of recommendation passed by the Board of Education, correctly spelled, and in every respect as it is to appear upon the diploma. The special attention of superintendents is called to this point. It has several times happened that the name of the applicant has appeared upon the certified copy of the resolution, upon the accompanying certificate, and signed to the application, each in form differing from the other. This more frequently occurs in the case of married ladies who use indifferently their own and their husband's initials. As the certified copy of the resolution of the local board is the voucher which we file for the diploma issued, it will at once be apparent why the names upon each should be identical. We don't want to even seem to be fussy about this matter of diplomas, but even that is preferable to more serious charges of looseness in the manner of issuing them, or of inaccuracies in the records concerning them.

If, therefore, a name is incorrectly entered upon a diploma it will not be the fault of this office, provided it corresponds with that in the resolution of indorsement.

Question. Can the school moneys in excess of five hundred dollars be apportioned now on the basis of teachers' reports for the school year ending June 30th, 1880?

Answer. Yes. The act went into effect upon its approval, March 4th, 1881. The portion of the subdivision of section 1858 bearing upon your question reads as follows: "All moneys remaining on hand, etc., must be apportioned to the several districts in proportion to the average daily attendance in each district *during the preceding year*."

Question. Are school districts having less than ten census children entitled to an apportionment?

Answer. No. See subdivisions third and fourth of section 1858.

Question. In the formation of new districts should the boundary lines of the proposed district come within two miles of any district school-house?

Answer. There is nothing in the law regulating the matter. So far as the law is concerned, the nearest boundary line of the proposed new district may immediately adjoin the lot upon which the school-house in the old district is located. It is only necessary that the parents or guardians of at least fifteen census children,

between the ages of five and seventeen, residents of such proposed new district, should reside at a greater distance than two miles from *any* school-house (public, of course).

Question. In case the utmost limit of taxation is reached, and petitions for new districts are presented, what is to be done?

Answer. The superintendent should simply exercise the same judgment in regard to the necessity for the formation of the new district as would be exercised if the limit of taxation (county, it is presumed,) had not been reached. Parties should be informed clearly, that, in organizing small new districts—especially under such circumstances as set forth in the question—it is not at all unlikely that special district taxes may have to be levied to maintain a school for the length of time necessary to entitle them to receive apportionments of State and county moneys.

Question. Must bills be itemized, accompanying all orders drawn on the school superintendent, including those for compensation of census marshals, (including teachers' salaries, in which the names of the month are required)?

Census marshals, frequently clerks of boards of school trustees, positively refuse to itemize. Should they not specify the number of days, price per day, etc.?

Answer. Section 1543, subdivision third, provides, among other things, as follows: * * * "but no requisition shall be drawn upon the order of the board of trustees against the county fund of any district, except for teachers' salaries unless such order is accompanied by an itemized bill showing the separate items, and the price of each, in payment for which the order is drawn."

Now, this is mandatory, and leaves the superintendent no option. Nor can the law be suspended to accommodate census marshals or district clerks. The question is, however, to what extent such a bill can be itemized. The law above quoted requires that the bill shall "show the separate items," and it will probably be claimed that the taking of the census is but one item.

It is difficult to fix upon a uniform basis for compensating census marshals. In a large and sparsely settled district it would necessarily occupy a longer time to list the same number of children than in a small and more densely populated district. To pay by the day would be to the advantage of one, and to pay pro rata for the children listed, would be to the advantage of the other. It is therefore probable that few marshals are paid by the day or per capita, and hence it would be impossible to present an itemized bill, and it therefore should not be insisted upon. It is the duty of the superintendent to refuse to draw his requisition in favor of a marshal for a sum that shall be plainly in excess of a reasonable amount.

The following is in answer to a letter of inquiry concerning city teachers.

In answer to your inquiries I would say that section 1793 contains the following:

"The holders of city certificates are eligible to teach in the cities in which such certificates were granted, in schools of grades corresponding to the grades of such certificates, and when elected, shall be dismissed only for violation of the rules of the Board of Education, or for incompetency, or for unprofessional or immoral conduct."

The act, of which this is a part, went into effect on the 4th of March, 1881; and its effect is to do away with "annual elections" in cities.

In the case of Oakland, it was held that it could not effect the tenure of office

of those teachers who were elected prior to March 4th, but would apply to teach-who were or who shall be elected in cities after that date. But to answer your questions categorically and in their order :

1. Does that section (1793) mean that if a teacher holding any city certificate is entitled this year to teach in said city, he does not have to be elected next year and thereafter ?

Answer. Yes.

2. Can a teacher elected this year under that section be dropped at the end of the year, except for the causes stated ?

Answer. No.

3. At what time does (or did) this law go into effect? Do teachers that have been teaching in cities and holding city certificates during the past year or term, need to be elected for the year to come ?

Answer. Yes, if they were elected prior to March 4th, and for a year or term.

A meeting of the State Board of Education was held at Sacramento on Monday, June 13th, 1881, to which date it was adjourned from May 21st for want of a quorum.

Present: Governor Perkins, Professor Allen, and Superintendent Campbell, being a full board.

The minutes of the last meeting were read and approved.

By a unanimous vote Educational Diplomas were issued to the following persons :

Alice Augusta McCord, Alameda Co.	E. E. Panabaker, Sacramento Co.
Philip M. Fisher, "	Mrs. Fannie H. Landes, " City.
Maggie McAllen, Calaveras Co.	Edward P. Rowell, "
Mattie Coulter, "	Mary Sally, San Benito Co.
Judson A. Holland, "	Mrs. Theresa F. Oldham, San Mateo Co.
Fannie E. Griffin, Contra Costa Co.	Kate Raymond, "
Milo H. Gates, Eldorado Co.	Clara B. Barlow, San Francisco Co.
George Kane, "	Henry Clarence, "
Frederick J. Miller, "	Janette Ephraim, "
George A. Richard, "	Jennie C. Lundt, "
Mrs. Julia Markley, Marin Co.	Lottie A. Prevost, "
George S. Wells, Mariposa Co.	Nathalie A. Selling, "
James A. Riley, Monterey Co.	Mrs. Nellie W. Keniston, San Joaquin Co.
Susie Hale, Nevada Co.	John C. Dunn, "
Peter T. Riley, "	Josephine McStay, "
John T. Riley, "	Sam'l L. Morehead, "
Miss Franc M. Hall, Nevada City.	Mattie L. Aram, Santa Clara Co.
Mrs. Armada C. Lowell, Placer Co.	James L. Dunn, "
Esther Brown, "	Ida L. Eckhart, "
Mrs. Emma A. Curtis, "	Lafayette Lillard, Solano Co.
Ida M. Houn, "	T. J. Mize, "
Isabel May, "	George T. Noe, Sutter Co.
James T. Roland, "	Miss M. N. Hammonds, Stanislaus Co.
Mary V. Walsh, "	Wm. H. Hatton, "
Harry C. Wells, "	Ira G. Leek, "
Mrs. Carrie L. Variel, Plumas Co.	Miss Coloma C. Pendergast, "
Sabra A. Finch, Sacramento Co.	Mrs. Alice C. Walden, "
Mrs. Carrie L. Leacock, "	Mrs. Anna Frisbie Bailey, Vallejo City.
Harry Lufkin, "	Katie B. Fisher, Yolo Co.
William L. Nutting, "	

By the same vote Life Diplomas were issued to

Anna R. Congdon, Alameda Co.	Wm. S. Church, Plumas Co.
Wm. B. Lovett, "	Mary C. Chesbro, Sacramento Co.
Octavia Wetmore, "	Ernest H. Bradner, "
Mattie J. Shaw, "	Chas. E. Bishop, "
Mrs. Sarah J. Williams, "	Cynthia E. Bishop, San Diego Co.
Richard DeLancie, Butte Co.	Mrs. Anna M. Brown, San Francisco Co.
Mrs. Nancy H. Deuel, "	Carrie B. Barlow, "
Jos. F. Halloran, "	Pauline Hart, "
Jennie A. Norris, Eldorado Co.	Mrs. Lottie A. Hartmeyer, "
Mrs. Alta C. Phelps, Humboldt Co.	M. A. E. Phillips, "
James W. Ellis, "	Wm. A. Robertson, "
Stanley C. Boom, "	Mrs. Eulalie A. Wilson, "
Calvin Lindsay, Kern Co.	Mrs. Sarah C. Harry, San Joaquin Co.
Joseph H. Stewart, Lassen Co.	Irene Leadbetter, "
Alice S. Armor, Los Angeles Co.	Susie Crenshaw, Santa Clara Co.
Maggie Hamilton, "	Mrs. Dora C. Redding, Siskiyou Co.
Oscar F. Willey, Monterey Co.	George Rice, "
Claude F. Rubell, "	Mrs. Orpa A. Long, Solano Co.
Emma F. Cole, "	Pricilla Edwards, Stanislaus Co.
Sam'l J. Pullen, Placer Co.	J. Walter Smith, "
John T. Darwin, "	Byron G. Lyman, Sutter Co.
Aurelius O. Daman, "	Barton W. Everman, Ventura Co.
Edward S. Atkins, "	Glendora H. Pedlar, Yolo Co.
Mrs. Eliza P. Veeder, Plumas Co.	Emma S. Jory, Yuba Co.

It was voted to issue a duplicate Life Diploma to Martha W. Loring, she having filed with the board an affidavit that the original was lost or destroyed.

Two applications for Life Diplomas, and one for an educational diploma, were not acted upon on account of informalities.

The following resolutions were adopted :

Resolved: That the State Board of Education will hereafter hold four regular meetings annually, as follows, viz.: on the third Saturday of March, June, September, and December, and that the first of these regular meetings be held on the third Saturday of September, 1881.

Resolved: That the SCHOOL AND HOME JOURNAL be, and the same is, hereby redesignated as the official organ of the Department of Public Instruction, in accordance with subdivision twelfth of section 1521, Political Code, from the first day of July, 1881, the same to be paid for by requisitions and warrants drawn against the library fund of the several districts of the State, semi-annually in advance, at the rate of one dollar and forty cents (\$1.40) per annum.

On motion, the board adjourned.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN JUNE.—MERCURY is an evening star, setting on the 10th at 9 h. 13 m. P. M.; on the 20th at 9 h. 0 m. P. M. and on the 30th at 8 h. 25 m. P. M. He is at his greatest elongation on the 20th, and near the moon on the 28th. VENUS is a morning star, rising on the 10th at 3 h. 0 m. A. M.; on the 20th at 2 h. 42 m. A. M., and on the 30th at 2 h. 22 m. A. M. She is near Saturn on the 6th, at her greatest

brilliance on the 8th, near Jupiter on the 19th, near the moon on the 22nd, and at her greatest distance from the sun on the 27th. MARS is also a morning star, rising on the 10th at 2 h. 18 m. A. M.; on the 20th at 1 h. 54 m. A. M., and on the last day of the month at 1 h. 28 m. A. M. He is near the moon on the 21st. JUPITER is a morning star, rising on the 10th at 3 h. 0 m. A. M.; on the 20th at 2 h. 27 m. A. M., and on the 30th at 1 h. 53 m. A. M. He is near the moon on the 22nd. SATURN is a morning star, rising on the 10th at 2 h. 56 m. A. M.; on the 20th at 2 h. 21 m. A. M., and on the 30th at 1 h. 42 m. A. M. He is near Venus on the 6th, and near the moon on the 22nd. On the morning of the 22nd, Venus, Jupiter, Saturn, and the moon are in conjunction, with Mars and Mercury not far away, thus forming a conjunction as rare as it is beautiful.

EARTHQUAKES.—M. J. Delaunay has advanced a theory that earthquakes, as well as many meteorological phenomena, are produced by the passage of the planets through the masses of meteors. The more severe seismic tempests, he believes, are caused by the passage of the larger planets through the cosmic groups, particularly through those of longitudes 135° and 265° , which appear to give rise to the August and November meteors. The passages of Venus, the Earth, and Mars through the groups seem to occasion only earthquakes of a secondary order; but each of these planets produces on its passage an increase of shocks in the months of August and November. The most violent and longest continued convulsions, Mr. Delaunay suggests, take place when two large planets pass by the cosmic groups at the same time. Of this character were the earthquakes of 1755, 1783, 1829, and 1841. Accepting these principles as the laws regulating the occurrence of earthquakes, and admitting that certain of the cosmic groups may have a slow oscillatory motion around a mean position, it is not difficult to predict the dates at which the earthquakes to occur between this time and 1930 will, according to his theory, be due. The most important earthquake periods will probably occur in the years and groups of years 1886, 1890-91, 1898, 1900-10, 1912-13, 1914, 1919-20. The next seismic tempest may be expected to follow the passage of Jupiter through the zone of the August meteors in 1883.—*Popular Science Monthly*.

MR. J. P. LESLEY, of Philadelphia, has shown that Dr. John L. Le Conte, of the same city, anticipated by several years the suggestion attributed to Professor Metschnikoff that a fungus which would destroy insects should be deliberately cultivated and applied in quantity to places infested by obnoxious insects. At the Portland meeting of the American Association for the Advancement of Science, in August, 1873, Dr. De Conte delivered an address in which he recommended, among other things, "careful study of epidemic diseases of insects, especially those of a fungoid nature, and experiments on the most effective means of introducing and communicating such diseases at pleasure."

It is reported in the *British Medical Journal* that, in the course of a post-mortem examination at a lunatic asylum in Saxony, a needle was found sticking in the heart. It had passed through the posterior wall of the left ventricle. The patient, a man aged twenty-five years, had died of peritonitis. He had always felt well previous to his last illness, and never complained of any cardiac troubles. In what way the needle entered his heart remains unknown.

PHARE's method of treating colic consists in inversion—simply in turning the patient upside down. Colic of several days' duration has been relieved by this means in a few minutes.—*Four. des Sci. Med.*

AMONG the wonderful and useful inventions of modern times, is the common sand blast. Suppose you wish to cut letters in marble: You merely cover it with a thin sheet of wax, as thin as a wafer; then cut in the wax the inscription required; then pass it under the sand blast, when the letters will be cut deep; or take a sheet of plate glass, say six by two feet, cover it with a piece of fine lace, then pass under the sand blast. Now remove the lace and you have a beautiful raised pattern on the glass. In this way, all patterns can

be cut on glass at a small cost. The sand attacks anything hard, but not soft materials; thus the fingers of the workman are safe, but he must look out for his nails, which will rapidly disappear. A piece of rag will protect his finger, but a metal thimble will soon be whittled away. This is the philosophy of the sand blast.

DR. ROYSTON PIGOTT has found that by making a miniature of an object, such as a spider line, and examining it with a microscope, objects as small as the millionth part of an inch could be seen, and in a late communication to the Philosophical Society, Cambridge, he took exceptions to the view generally prevailing among opticians that it is useless to attempt further perfections of the microscope.

IN cases of both acute and chronic poisoning by arsenic, Dr. E. Ludwig finds the metal chiefly collected in the liver, very little retained in the brain and the bones.

WE LEARN from English exchanges that steel scale, which has been almost entirely worthless, is now used for the manufacture of paint for the protection of iron and steel from corrosion in any position and in any climate.

A CORRESPONDENT of the *Scientific American* says: "Let any one who has an attack of lock-jaw take a small quantity of turpentine, warm it, and pour it on the wound, no matter where the wound is, and relief will follow in less than a minute. Nothing better can be applied to a severe cut or bruise than cold turpentine; it will give certain relief almost instantly. Turpentine is also a sovereign remedy for croup. Saturate a piece of flannel with it, and place the flannel on the throat and chest, and in every case three or four drops on a lump of sugar may be taken inwardly."

CELLULOID is reported in a new role, having recently been successfully applied in the form of a veneer in the ornamentation of furniture. It makes an excellent imitation of malachite, or colored marbles, for table tops; is used for panels in imitating tortoise-shell and other costly materials, and its manufacture is destined to become one of the most profitable industries of the country, owing to the many and varied uses to which it can be applied.

SUMMER INSTITUTES.

NEVADA COUNTY.

FIRST DAY, APRIL 25TH, 1881.—The institute was called to order by Superintendent Wickes at 10:15 A. M. The forenoon was taken up in the organization and the appointment of the committees on Order of Exercises, Text-Books, Introduction, Resolutions, and Music. Mr. C. L. Brown of Sweetland was elected Vice-President, and W. Rogers of Birchville, and Miss Lelia Peel of Truckee, Secretaries.

At 1:30 P. M. the superintendent delivered his Salutatory Address, in which he welcomed the teachers and the friends of education to the convention, dwelling on the objects and the amenities of such gatherings; the law making them mandatory being in harmony with the desires of the teachers as well as in the line of their professional needs. The objects of the institute, as outlined and enlarged upon, were:

1st. Reunion.

2nd. To stimulate the teachers to seek more advanced culture.

3rd. To take a wide range of the branches taught, and get at the philosophic and intellectual principles that lie behind them.

4th. To give the teachers a professional standing in the eyes of the public.

5th. Principally, and in the eyes of the law, to secure normal training.

The speaker alluded to some strictures upon the public school system, and presented facts against such being listened to by the people. He asserted, that while the church was pre-eminently the teacher of morals, it could not monopolize that work; that the precepts of Christ were as free as his wanderings—as free as the dew, the air, and the sunshine.

The church, the school, and the home should co-operate in the moral education of the young, especially as all agreed upon right conduct, if they did not upon formulated creeds; that where such co-operation was not secured, the moral education might be defective. The speaker insisted upon the teachers complying with the demands of the law, not alone in morals and manners, but in the training of the pupils for good citizenship. The address closed with an allusion to the memories of the past and present as clustering around these reunions, and the revival in the future.

Miss Lawson conducted a Kindergarten exercise on "Numbers" in an admirable manner, her little class identifying itself with her. She showed the practicability of engraving this system upon the common school system, especially in the graded schools.

John Riley gave an exposition of the modes of extracting roots of powers by use of algebraic formulas.

Professor Power, principal of the schools of Grass Valley, treated in an able manner the subject of "Reading in the Higher Grades."

SECOND DAY, TUESDAY.—The institute met at 9 A. M. Miss Madigan, the critic of the preceding day, read a criticism made up alternately of hits and meritorious awards. A spicy criticism always takes well with an institute. A lady generally strikes, however, with a gloved hand.

Mr. McGee applied the method of proportion to percentage, and showed, that in examples where cancellation was effective, it was the best mode of dealing with examples in that department. Others took part in the discussion.

Professor Jos. Leggett, and Superintendent Campbell, spoke on "Mathematics as a Science," enlarging the views of many of the teachers upon the subject.

Mr. Mack of Truckee read an essay, defending corporal punishment.

Professor Leggett of San Francisco delivered an instructive address on "Grammar," showing the absurdities and inconsistencies of the various text-books, and calling for a remodeling of the whole subject. Mr. Leggett's lecture was exhaustive of the subject and highly instructive in character, and is worthy of reproduction in every institute of the State.

In the evening the State Superintendent lectured upon "The Duties of Teachers, and the Relative Merits of Studies." Physiology and the laws of our being, as applicable to both sexes, he made very prominent. The material of the lecture was the best, the sentences terse, and the style as clear as crystal. A large audience greeted him.

THIRD DAY, WEDNESDAY.—A query box was opened, and many pertinent questions brought before the institute.

Miss M. Henderson read a sparkling criticism upon the preceding day's exercises. The critique closed the suspense of some by mingling a little sugar with the acid she had prepared for them.

Mr. C. H. Crowell read a paper upon "Moral Instruction in the Schools." F. Nilon presented a paper on "Perceptives." Walter Finnie followed in "Physiology and Hygiene." J. G. O'Neill took up the subject of "Composition," and treated it well. Eugene O'Neill read a dissertation, giving reasons "Why Teaching should be Objective." Ex-Superintendent Geo. Robinson read a paper on "Physical Geography." Mr. Geo. Horton read an essay on "Securing Attention."

Prof. Kellogg of the State University lectured in the evening to the teachers and to a large audience generally. He presented "Higher Education and the Claims of the University." He wished that the common schools should be closely connected with the University. He stated also, that a knowledge of Ancient History, such as is secured by the higher education, is necessary on the part of those who attempt to lead political movements.

FOURTH DAY, THURSDAY.—Wm. Herrod read a criticism abounding in witticism^s and points. Mr. Tiffany followed with the subject of "History."

H. Baldwin presented "Common Fractions." He encourages his children to improve examples; some scholar selected to propound them to the class. This mode awakens the liveliest interest. The superintendent indorsed Mr. Baldwin's method, he having seen its ready results in the gentleman's school at Grass Valley.

Mr. Bulfinch read an essay on the "Study of English Literature" that showed a knowledge of the subject worthy of remark. He illustrated by copious extracts from various authors.

M. B. B. Potter took up "Object Teaching," and found fault with the prevailing modes, which he burlesqued in a manner to bring down the house.

FIFTH DAY, FRIDAY.—Professor Horton, lately employed in San Francisco, treated his system of penmanship. His system was shown to be practical, devoid of unnecessary details, and promotive of its end. The teachers were instructed.

P. Riley read an essay on the "Ancient Classics." Miss McKay read an essay on "Reading," creditable in arrangement and material.

Owing to want of time, the exercises were closed abruptly, and part of the programme had to be dispensed with.

The musical exercises, vocal and instrumental, were of the highest character, and the institute of this year is decided to have been the best ever held in the county. Over one hundred teachers were present, and every day brought a crowded audience to its sessions.

VIATOR.

MERCED COUNTY.

The teachers of this county held a session of the annual institute at Merced in the latter part of April. Superintendent Dixon presided, and Mr. J. L. McClellan acted as secretary.

J. L. McClelland opened the subject of "Primary Arithmetic." This subject was discussed for an hour—Mr. Howell, Mr. Chadwick, Mrs. White, Mr. Long, Mr. Boynton, and others taking part—after which there was music. Mrs. White then opened the discussion of "Primary Reading." Several important points were made.

Messrs. Boynton and Kelsey opened the discussion of "Geography," which was continued for only a few minutes, after which the Committee on Music sang a selection from the "Song King." "Spelling" next received a few minutes' attention.

After calling the roll, the next subject on the programme, "Composition," was taken up. Mr. McClelland spoke for a short time on the importance of composition and how to teach it, after which music. Then Mr. Elliott read a very instructive essay on "Difficulties in School Management, and How to Overcome Them." This production suggested several points of discussion.

"Written Arithmetic" was taken up, W. A. Long opening the discussion. It was continued for half an hour or more, after which the subject of "Grammar" was taken up. Mr. L. D. Stockton gave an interesting opening address on this subject, after which it was generally discussed by various members of the institute.

After music, Mr. Joseph Norval gave a very instructive lecture on "Epistolary Correspondence," which was listened to with marked attention. Mr. Chadwick then addressed the institute on the subject of "Civil Government."

CORRESPONDENCE.

FROM WASHINGTON TERRITORY.

MR. EDITOR: We had the pleasure of attending the Teachers' Institute at Dayton, Columbia County, Washington Territory, May 5-6th. Very few pleasanter places than Dayton could have been chosen. This town is located in the upper part of the famous Walla Walla Valley, and is surrounded by a fertile, rolling country, which, though a wilderness a few years ago, is all owned and improved, with fine orchards and buildings, affording many happy homes to those who were brave enough to undertake a pioneer's life.

The town is pleasantly located on the right bank of the Touchet river, not far from the base of the Blue mountains. The surrounding scenery is grand; delightful landscapes meet your view in all directions. On the south, amid tall, leafy trees and pleasant, shady walks, the Touchet comes dashing down from the snowy mountains—a noble stream of pure, sparkling waters, wherein the finny swarms abound, to the delight of the parched angler who in summer seeks these cool retreats for pastime and pleasure.

Eight years ago lots were given away here that would now be valued at many thousand dollars. The town, through its natural advantages and enterprise of its citizens, will soon have a railroad communication with other parts of the territory; also a fine flume built from the mountains. The town is regularly laid out with fine wide streets, which are kept in good repair. The buildidgs would compare favorably with those of older States. It has several good church-houses and a splendid public school building, with new desks from Thos. Kane & Co., Chicago. The school building is large and commodious, and is adorned by a fine cupola, in which hangs a splendid bell, that may be heard for miles around. Here about three hundred children assemble to receive instruction from a faculty of very efficient teachers under the supervision of Prof. McCulley.

During the day the sessions of the institute were held at the public school building, while the evening sessions were held at the Universalist Church. The evening sessions were very interesting: they consisted of vocal and instrumental music, essays, declamations, and very fine addresses from Professor McCulley and the clergymen of town. The advice contained in these evening addresses is well worthy of remembering.

Unfortunately Professor McCulley was engaged in the arduous task of examining teachers while the institute was in session, but he still endeavored to have time for giving material assistance to the institute.

Elder J. D. Flenner gave a very fine lecture on "The Theory and Practice of Teaching," which showed his thorough knowledge of the subject. The elder's lecture on "Theory and Practice" is well worthy of the careful reflection of every faithful teacher.

It is our opinion that the institute was a great benefit to the teachers of the county. We regret that space will not allow of presenting the individual merits of all, for it really appeared that none could be considered spectators, as each was anxious to contribute to the interest of the institute, giving their opinions with the greatest deference, with regard to that of others, so that the institute was a very pleasant, instructive place.

It was urged that teachers keep improving and be fully up to the pace of the times; and that for this end a live journal on education was indispensable, it being stated that physicians and lawyers were regular subscribers for the journals of their respective professions, in order to find the latest improvements in these vocations. Further, it was recommended, that while the best journal should be secured, preference should be made with regard to journals published on this coast, as Eastern journals were not so likely to meet the wants of our school system as a journal would do which was published at home. At this crisis we presented several copies of the PACIFIC SCHOOL AND HOME JOURNAL; but,

as it was the close of the institute, half the teachers had gone home; yet, to our great surprise, we had no trouble in getting twenty-seven signers for the JOURNAL, and Professor McCulley expressed his confidence in getting nearly every teacher of the county to subscribe. How is that for a country where the savage Indians hunted the deer and danced the war dances a few years ago?

J. G. B.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

The school census this year in San Francisco shows a decided decrease. It appears that there are but 54,000 children between five and seventeen years of age, against nearly 58,000 last year, a decrease of over 3,000. From returns thus far received there seems a decrease in most parts of the State, in many places as great, correspondingly, as in San Francisco.

Of the six hundred boys and girls examined for admission to the high schools, about three hundred and fifty were successful in securing admission.

The city schools have six weeks vacation, ending July 11th.

ALAMEDA COUNTY.

Prof. W. H. Galbraith, formerly principal of the Haywards school, has been elected to the principalship of the grammar school at Berkeley. Mr. Galbraith is one of our ablest teachers, and will undoubtedly fill this advanced position as acceptedly as the Haywards school.

LOS ANGELES COUNTY.

The Los Angeles High School can take high rank among schools for secondary education. Three full courses of study are presented; a scientific, requiring three years' work; a literary and a classical, requiring four years each. These courses are designed to meet the requirements for admission to a corresponding course in the State University.

A literary society has been energetically conducted in connection with the High

School during the last three years, and a natural science club is now in process of organization, that promises to be exceedingly popular. It is already in communication with several Eastern science associations for the purpose of exchanging the rocks, ores, flora and fauna of this region for those of other sections of the country. We now possess the nucleus of a fine cabinet, a good library, and a good supply of philosophical, physiological, and chemical apparatus.

More than one hundred pupils have been enrolled during the present year, which presents a graduating class of twenty members. The commencement exercises will take place Thursday, June 23rd, at Turnverein Hall, at which time the prizes that were offered by Dr. Walter Lindley, of the board of education, will be awarded for the best essays from the senior class on the subject: "A History of the Public Schools of Los Angeles." Dr. Lindley has offered a copy of the last edition of Webster's Unabridged Dictionary as the first prize, and a copy of Dr. J. G. Holland's complete poetical works as the second.

Dr. J. P. Widney, President of the Board of Education, will give an evening reception to the graduates at his residence, a courtesy that he extended to the graduating class last year, and which proved to be a delightful affair. The Ivy Social Club also intends to give them a reception.

The election of School Trustees will be held the first Saturday in June. The

schools will close for the summer vacation Friday, June 3rd.

Mr. Reanio has been appointed Principal of the Bath Street School, Los Angeles City.

The Maizeland District is to have a new school-house.

The people of Little Lake District are talking of taxing themselves to build a new school-house, which is much needed.

SAN DIEGO COUNTY.

The public school at Poway is again in session, taught by Miss Townley, who is ranked as one of the best teachers in the county.

The people of San Diego propose to issue bonds for a \$15,000 school building. Mr. Russ offers to furnish the lumber for such a building gratis.

The school at Ballena, taught by Mr. A. A. Wood, closed May 6th. Mr. Wood is an able teacher, and the school has prospered wonderfully under his instruction. This is the verdict of the trustees and school patrons.

SAN LOUIS OBISPO COUNTY.

Mr. C. H. Woods is reappointed a member of the Board of Education of this county, and Mr. James A. Ford is appointed to succeed Mr. L. M. Kaiser.

Miss Mattie Coppelle opened the school at San Simeon May 9th.

The work on the new Santa Rosa school-house, near Cambria, is progressing finely. The building will be ready for occupancy in two months.

The bad weather and the prevalence of measles have caused many absences in the city schools the past month, otherwise they are all in good condition, and prospering under the care of good teachers. In Mr. Meredith's room the number enrolled is 56. In Miss Churchill's room the number enrolled is 58.

Miss Meda Cole reports the Central District school in session, with 25 scholars in attendance.

The Las Tablas school is in session, and prospering under the present teacher, Mr.

A. F. Parsons. Total number enrolled 30. The trustees have added considerably to the district library.

The school at Eldorado District, taught by Miss Delia Beauchamp, has 16 scholars enrolled.

The Oro Flaco school has 53 scholars enrolled. The school is taught by Miss Jessie D. Lucas.

KERN COUNTY.

The non-payment of taxes on the part of the Railroad Company has caused the closing of the schools in many districts of this county. Had the tax been paid, the schools could have remained in session five or six weeks longer.

SOLANO COUNTY.

The first term of the Dixon High School closed May 20th. The school is well established, and has grown steadily in numbers. Mr. Wallace and Mr. Story are teachers of this school.

The school at Winters closed May 4th. Mr. P. Larew, who has been teaching in this place for several years, has gone East for a visit of a few months.

STANISLAUS COUNTY.

The Salida school closed April 29th with a picnic in a grove on the Stanislaus river. The pupils presented their teacher, Mr. Hatten, with a fine album, in token of their appreciation of his efforts in their behalf.

Mrs. L. S. Rogers has been appointed member of the Board of Education, vice Mr. Lindsey, resigned.

The Sumner school has been taught the past term by Professor Hursh. Trustees, parents, and pupils hope for his return to the district when the school shall be again in funds.

Miss Malden receives high commendation for her success in the management of the Tehachipa school.

Mr. and Mrs. Rousseau of the public school at Bakersfield left that place May 7th, the term of the school having expired. A party was given in their honor by pupils and friends the evening before their departure.

MONTEREY COUNTY.

The Board of Trustees of Salinas City have accepted the resignations of Mr. Hitchcock and Mr. Willey, teachers of the East End school, and the position filled by Miss Manning is declared vacant. Mr. Finley, a former teacher in this county, has been appointed principal, at a salary of \$100 per month.

The total number enrolled in the Salinas school is 338; average attendance, 295.

Prof. L. V. Hitchcock was recently made the recipient of a handsome watch-guard from the pupils of his class-room.

SAN JOAQUIN COUNTY.

The Board of Supervisors have elected Mr. F. P. Russell, the principal of the Lodi school, a member of the Board of Education. Mr. Hiram Hamilton is re-elected.

The Stockton Board of Education are practicing economy by dismissing the lady assistant teacher in the high school. The principal and vice-principal are doing the entire work of the school.

The school trustees of Mount Carmel District are contemplating building a new school-house about eight miles from Stockton, on the Sonora road.

BUTTE COUNTY.

The Berry Creek school-house, nineteen miles from Oroville, was burned Saturday evening, May 14th. The cause of the fire is unknown. The loss is \$600; insured for \$400.

SACRAMENTO COUNTY.

The Educational Institute which meets at Sacramento in June will be addressed by Hon. W. A. Cheney, who will speak upon the subject of "Labor;" Hon. L. Grove Johnson upon "Government;" State Superintendent Campbell upon "Education," and Dr. I. E. Dwinell upon "Religion."

The Brown School District is to have a new school-house to cost \$400.

Messrs. Rowrell and Johnson, principals of the two Grammar Schools at Sacramento, will open private schools in their respective school-houses at the close of the present term. The private schools will be continued through the vacation.

SAN BERNARDINO COUNTY.

The examination of teachers in this county begins June 21st at Colton.

San Bernardino County has three new School Districts named Washington, Central, and Jonata. The district heretofore known as Jonata is hereafter to be called the Majoqui District.

NEWS RECORD.

OUR record extends from APRIL 30th, to MAY 30th inclusive.

Foreign and Domestic.

The situation in Ireland is daily becoming more alarming. A large number of arrests have been made, the most important being that of John Dillon, member from Tipperary, who was arrested last week, under the Coercion Act. This action on the part of the British government was the occasion of considerable debate in the House of Commons, and a number of prominent Home Rulers denounced it as an outrage. Turbulence is reported in the west of Ireland, and several monster meetings have been

held to express sympathy for the incarcerated agitators. The case of Mr. Bradlaugh, the expelled member, is still the subject of discussion in the House.

The Land Bill is now up for final passage in the House of Commons, and will soon become a law. It is confidently expected by the Liberals that this measure will do much to quiet the agitation.

The first and authorized edition of the revised translation of the New Testament was published simultaneously in all English speaking countries May 20. There were

sent to this country from the Oxford and Cambridge presses, 400,000 copies.

Other editions published by the different publishers of the country have followed in rapid succession. The first complete copy printed and bound, was presented to Queen Victoria.

Herr Dreineus and Herr Hulske, the famous Berlin electricians, have constructed an electric railway about six miles from that city, on which at a public exhibition just given, they have propelled a locomotive and car at the rate of eighteen English miles per hour.

Russian affairs at home look decidedly gloomy. General Mellikoff, entrusted by the late Czar with almost dictatorial powers to crush out the Nihilists and preserve the peace of the Empire, has resigned his office.

The Bey of Tunis has been coerced into signing a treaty of peace with France by which he accepts what may be termed a French protectorate for Tunis. The French are authorized to occupy such positions with their troops as their military commander may adjudge needful to preserve the peace and secure the observance and execution of this treaty. The Bey is interdicted from entering into any new treaties with other nations without the assent of France: and provision is made for the remodeling of the revenue system so as to bring it virtually under full domination of the intruders. Tunis agrees to be responsible for the war indemnity demanded of the hostile tribes which gave the pretext for this invasion.

The anti-Jewish riots in southern Russia begin to recoil on their dastardly abettors. Society seems to have become thoroughly disorganized. Railroad traffic is practically suspended in some places. The rioters not only maltreat and massacre the Jews in their shops and houses, but when the hated race seek to escape their persecutors by flight, the latter endeavor to cut off all exit, even forbidding railway engineers to work on trains carrying Jewish refugees. The houses and shops of Jewish mechanics and traders have been completely wrecked at many points, and business of all kinds has been so far suspended that there are now thousands of persons in distress for subsistence, among whom are not a few of the rioters themselves.

There is war between the Boers and the native tribes. Under the terms of the recent treaty between the Boers and the English, the latter must take a hand in this matter.

Two more heavy earthquake shocks have occurred in the unfortunate island of Scio,

overthrowing several houses which had withstood the former convulsions.

The treaty between Russia and China has at last been ratified at Peking, and the long impending war between these two powers is averted. For months together it seemed almost hopeless to expect that the conflict of arms could be avoided.

Senators Conkling and Platt, of New York, raised a real sensation, not only in Washington and New York, but throughout the whole country, by suddenly resigning their seats in the U. S. Senate, as soon as it became certain that Judge Robertson, nominated by the President for the New York Collectorship, would certainly be confirmed. They then immediately commenced an active canvass of the New York Legislature for a re-election. At last accounts, however, they have not been successful.

Educational.

Young women as well as young men are admitted to the Italian universities.

From a recent circular issued by Commissioner Eaton we quote the following statistics, showing the school attendance in the principal countries of the world:

Countries.	Populations.	Pupils.
United States.....	50,152,866	9,424,086
France.....	36,905,788	4,716,935
Prussia.....	25,742,404	4,007,776
England & Wales.....	25,165,336	3,710,883
Japan.....	34,245,323	2,162,962
Austria.....	21,752,000	2,134,683
Italy.....	26,801,000	1,931,617
Hungary.....	15,666,000	1,559,636
Spain.....	16,507,000	1,410,000
Russia.....	78,500,000	1,213,325
Ireland.....	5,411,416	1,031,995

The Normal School Board of Minnesota unanimously adopted a resolution establishing a Kindergarten in the Winona Normal School. The object of this was not to secure the adoption of the Kindergartens in connection with the primary schools, but as a means of training the teachers who receive their professional education in the Normal School in the Kindergarten methods. The idea is an excellent one, and is worthy of imitation in California. Our Normal School is in fine working condition, and we know of nothing that would do more to keep it abreast with educational progress.

The total amount of funds held by Harvard University is stated at \$3,959,556.08. The Observatory received \$2,492.50 for the sale of time-signals during the past year, and the term-bills during that period amounted to \$239,945.43. Prizes were

given to the amount of \$1,254. The sum of \$100,000 has recently been presented to the college, to build a new hall for the Law School.

We see it stated somewhere, that some of the ruling men of the "New South" are either Yale or Harvard men. This is true of San Francisco and California likewise. The men who from the pulpit, through the press, in commerce, or politics, in a perceptible direct degree the future of this commonwealth, are graduates of colleges, principally of Harvard and Yale.

The trustees of the Massachusetts Institute of Technology has elected Gen. Francis A. Walker president of that institution to succeed President Rogers, whose resignation has been accepted.

Mrs. Oswald Ottendorfer, the wife of the editor of the *Staats Zeitung*, has given \$35,000 to the promotion of the German school system, in memory of her son, the late General Herman Uhl. The fund will be known as the Herman Uhl Memorial Fund. Of this amount the German Teachers' Seminary, Milwaukee, receives \$10,000; the Free German School in New York City, \$10,000; the German School of the Nineteenth Ward, the school of the Turner's Association, and Professor Adler's school, \$5,000 each. The money will be invested for these institutions and the interest paid them.

Minnesota has a law, to go into operation July 1st, to the effect that all school officers may introduce into the schools daily instruction in social science, good morals, and patriotism, no less than thirty distinct topics being specified, such as industry, health, honesty, etc. It may be required of the teachers to give a short oral lesson each day on one of the subjects named, and to require from the pupils some illustration of the same upon the following morning.

The Utah Legislature recently appropriated \$20,000 for the University of Deseret.

The latest report of the Minister of Education shows a steady increase of public instruction throughout the Japanese Empire. The school attendance is now 3,500,000, the males, however unduly preponderating. There is a good deal to do yet in the proper payment of teachers in Japan. School teachers' wages in that country are rather infinitesimal, something less than \$25 a year sufficing for the average schoolmaster.

Nebraska has a school population of 142,348 and an enrollment of 92,549, with 4,100 teachers. The school receipts last year were \$1,294,137, and the expenditures were \$1,249,793.

There are two universities in Hungary, a polytechnic school, two normal schools, eighty-nine gymnasien, and twenty-six real-schulen.

About forty female students are now pursuing their studies at the Harvard Annex.

The new Manual Training school in St. Louis promises to be very successful. It has a serviceable building, an income of \$4,000 guaranteed for five years, and \$10,000 was raised by the purchase of necessary appliances. The school now has about sixty pupils—many of them belonging to prominent St. Louis families. A tuition fee of \$240 is charged for the course.

Prof. W. T. Harris, lately superintendent of the St. Louis schools, is mentioned as the probable Chancellor of the Texas State University. An endowment fund of \$1,000,000 is now in the State Treasury, and this will be increased, it is thought, to \$2,000,000. Prof. Harris' salary will be \$5,000.

In the city of Chicago there are forty industrial schools. These are principally for little girls of the poorer families, and the number taught during the past year has been not less than 3,000. The girls are kindly cared for in these schools, and are taught sewing, cooking, and tidiness of person, dress, and housekeeping. This instruction is free, or for a mere nominal charge, and ladies of the best and wealthiest families are among the voluntary teachers. The influence for good exercised by these schools is very remarkable. Even the police and car drivers have remarked upon the improved appearance and behavior in localities where these schools are carried on.

The compulsory school law in Connecticut works well. The school population of the State last year was 140,235; of whom all but 13,565 attended school. Hartford and New Haven have efficient truant officers who manage their work admirably. The Connecticut schools cost last year \$1,408,373.74; the funds furnished amounted to \$1,481,680.93. The average salary of male teachers was \$56.43; of female \$35.42.

Nineteen per cent. of the students of Lassel Female Seminary at Auburndale, Mass., are taking a regular course in cooking, and ten per cent. a course in dressmaking.

At the city election, St. Paul, Minn., May 3rd, an overwhelming majority vote was cast for the issue of \$50,000 bonds for the erection of a new high school building.

In the city of Chicago the enrollment for April was 59,651; average daily membership, 46,997; average daily attendance, 43,-

402; per cent. 92.3; number of teachers, 943.

About two-thirds of the graduates of the Normal School in Bridgewater, Massachusetts, are women. The other third recently conceived the idea of forming a society, and lest some of the woman graduates should fancy themselves eligible to membership, they proposed to make their exclusion doubly exclusive by styling themselves the "Bridgewater Male Alumni Association."

Baden, with only 1,560,000 inhabitants, has two excellent universities, (Heidelberg and Freiburg), one polytechnic school at Carlsenke, which is considered one of the best in the world, and which is at present patronized by 22 American students, 9 gymnasien (classical secondary schools), 4 progymnasien, 7 realschulen (non-classical secondary schools), 27 higher burgher schools, 8 high-schools for girls, 7 teachers' seminaries, and 45 technical schools. The primary schools number 1,937, and the primary-school pupils 245,368.

In round numbers, 40 per cent. of Boston's school population is in primary schools, and fifty per cent. in the grammar schools, the average cost of instruction in the various grades of Boston is: Primary, \$18.45 per pupil; grammar, \$28.20; and high and normal, \$87.42.

The report of the Board of Education of New York City for 1880 shows that \$3,415,323 were expended for public education; the annual cost of grammar pupils averaged \$32; of primary pupils \$15.18.

In the last report of the Department of Agriculture, Commissioner Le Duc says that Mrs. Julia Atzeroth, of Braiden Town, Manatee County, Florida, has practically established the fact that coffee can be grown in that State. She has sent to the department a branch of coffee grown in the open air in her garden, and is confident it can be successfully grown further south, where frost never comes. The department has supplied her, and others in the same locality, with a number of young trees with which to enlarge the experiment.

The School Board of Indianapolis, after experimenting for years with various heating apparatus, are now in favor of heating all school-buildings with stoves, instead of steam, believing them superior in respect of ventilation and distribution of heat.

Personal.

Richard A. Proctor, the English astronomer, and Mrs. D. D. Crowley were married at St. Joseph, Mo., May 3rd. Prof. Proctor first met Mrs. Crowley while on his recent trip around the world.

Mrs. Theodore Parker, lately dead, was descended from the reputed discoverer of North America, Giovanni Cabota, and bore a remarkable resemblance to the Cabot family.

Republicanism is beginning to outdo royalty in the munificence of its presents. It is said that at the wedding of the Princess Stephanie and the Crown Prince of Austria, the King of the Belgians, her father, presented her with \$450,000. At the wedding of Miss Mills and Mr. Whitelaw Reid, it is said that the bride's father made her a present of \$500,000.

It is said that Bismarck, who, by-the-way, receives fifteen thousand dollars a year as Chancellor of the German Empire, is a Czech by descent; that near the year 1000 an ancestor of the diplomat was a teacher of music; that a second progenitor was the originator of the Czech's national costume, and a third compiled the first Czech dictionary.

The estate of the late Mark Hopkins, of the Central Pacific Railroad, has been valued by the appraisers at \$20,700,000.

The Marquis of Westminster left an estate with an income of more than a million a year, ten thousand pounds going to each of his daughters, and the remainder to his son, now the Duke of Westminster. Old leases falling in, and renewed at an advance of more than a hundred per cent., have doubled this vast rent-roll. One of the sisters married in Cannes, in the south of France, an accomplished physician, who wished to settle in London; but for the English contempt for physicians in general, and the Duke of Westminster's in particular, the Duke gave his sister another ten thousand pounds to keep her husband out of England.

Among the deaths this month, are those of three eminent writers and two generals of more or less merit. First are J. G. Palfrey and J. T. Fields, the latter well-known as an eminent publisher as well as a writer of ability. Emile Girardin, a French writer, Field-Marshal Benedek, an Austrian general, and General Von der Taun, a Bavarian distinguished during the Franco-Prussian war, complete the list.

Robert E. Lee was a direct descendant of four of the five heroes of Bannockburn; of the High Steward of Scotland; of Sir Robert de Keith, the great Mareschal of Scotland; of Thomas Randolph, Earl of Moray, and of King Robert Bruce, from whom he was the seventeenth in line.

Mr. James Gordon Bennett, the proprietor of the New York *Herald*, is said to be engaged to the daughter of the Prince de Furstenberg.

For thirty-four years Oliver Wendell Holmes has been a professor at Harvard.

Thomas A. Scott, so long and prominently connected with the railroad system of this country, died at Woodburn, Penn., May 21st; and is said to have left a fortune of \$13,000,000.

The author of *Native Races of the Pacific*, Hubert Howe Bancroft, is tall, broad-shouldered, and has an erect and imposing figure. His dark hair is slightly gray, and he wears a beard and mustache. His large library in San Francisco is plainly furnished, and consists principally of printed and manuscript volumes relating to the history of the west coast of North America. He has also an index costing ten thousand dollars.

General Longstreet, the American Minister to Turkey, has obtained a firman in favor of the American Archæological Society for excavations at Assos, on the island of Cephalonia, and has left Constantinople for Vienna and Western Europe on leave of absence.

The following brief sketch of Lord Beaconsfield's career is from *The School Bulletin* of New York.

Benjamin Disraeli, Earl of Beaconsfield, statesman and novelist, died in London, April 19th, at the age of seventy-five. Though of Jewish descent, he was educated in the Christian faith. The first thirty years of his life was spent in study, travel, and writing. To this period belong "Vivian Grey" (1826); "The Young Duke," "Contarini Fleming" (1830); Henrietta Temple, (1836); "Venetia" (1837), and a few other works. In 1837 he entered the House of Commons, where his maiden speech was clamored down, but he closed with the prophetic words: "I am not surprised at the reception I have experienced. I have begun several times many things, and I have often succeeded at last. I shall sit down now, but the time will come when you will hear me." In 1839 he married Mrs. Wyndham Lewis, "a perfect wife," who died childless in 1872, bearing the title Countess of Beaconsfield, which had been given her about 1870. Disraeli was a bitter opponent of Sir Robert Peel's free-trade policy, and became the leader of the Conservatives of the House of Commons in 1848, as the champion of the landed interest and the church. In 1832 he became Chancellor of the Exchequer in Lord Derby's government, and was chosen to the same office again in 1858 under the same Prime Minister. In 1867 he supported the Reform Bill which extended the right of suffrage to all householders in the borough, and to every person in a country with a freehold of forty shillings. In 1868 he became Prime Minister, held of-

fice for two years and a half, and was then succeeded by Mr. Gladstone. In 1874 he became Prime Minister again, and was succeeded the second time by Gladstone in 1880. He was made Earl of Beaconsfield in 1876. He gave the Queen the title of Empress of India, sympathized with Turkey in the Russo-Turkish war, annexed the Transvaal, invaded Afghanistan, conquered Zululand, and made the influence of England felt in the councils of Europe. His gains for England, however, were of little importance, and he left her more heavily in debt than ever and with wasteful expenditures. During his political career he wrote "Coningsby," (1844); "Tancred," (1847); "Lothair," (1870); "Endymion," (1880). He was buried at Hughenden by the side of his wife, "the best wife in England."

M. Earnest Legouvé says this to his granddaughter: "The people who praise you to your face and laugh at you behind your back say, 'Ah! all clever people write badly.' Answer by showing them, as I have shown you a hundred times, letters of Guizot, Mignet, and Alexandre Dumas the elder, which are models of calligraphy. Write well, my child—write well. Pretty writing in a woman is like tasteful dressing, a pleasing physiognomy, or a sweet voice."

Alexander III, has promoted to a captaincy the young lieutenant who wrapped his own mantle around the murdered Czar. "I have brought you a new cloak," said the young Czar; "I shall keep the other." He also gave the youth a present of 1200 rubles (about \$875).

The many friends of John G. Whittier, Thomas B. Aldrich, and W. D. Howells will be gratified to hear of the handsome bequest of \$5000 made to each of them in the will of the late James T. Fields, payable upon the death of his widow, unless she provide otherwise by will. He gives without this condition, sums of \$3000 and \$5000 to the Boys' High School, of Portsmouth, New Hampshire, the Girls' High School, at the same place, and the Harvard Benevolent Society, of Portsmouth; also \$5000 each to the Home for Aged Colored Women of Boston, Home for Aged Men of Boston, the Dedham Home, The New England Freedom aid Society, and the Kneeland Street Hospital. To the Harvard College library he gives the manuscripts of his books and poems, and to the Dartmouth College library one hundred volumes to be selected from his library by the president of the college.

Prof. Owen has been able to evolve the great horned dragon, with vast teeth, barbed tail, huge claws, and powerful wings, first cousin to St. George's dragon, not from his inner consciousness, but from a few fossil remains which have been sent

him, and to decide that he once lived in Queensland.

General Notes.

The quarterly report of the Bureau of Statistics shows that 573,703 immigrants came into this country in 1880.

LENGTH OF JUPITER'S DAY.—The Emperor of Brazil has transmitted to the French Academy a note of M. Crul's upon the time of Jupiter's rotation. The sharpness of outline and the bright color of the brown spot, which has been so long visible, enabled him to deduce from nearly 1,100 rotations a period of 9 h. 55 min. 36 sec.—*Comptes Rendus*.

The total debt of the United States, according to the public debt statement for April, is \$2,080,248,648; total interest accumulated and unpaid, \$17,555,241. The total cash in the treasury on the 1st instant was \$233,731,195, leaving the debt less cash in treasury, \$1,864,072,693.

Within a few miles of Hughenden Manor, the estate of the late Lord Beaconsfield, is the place where Milton finished "Paradise Lost"; Olney, where the poet Cowper lived; Hampton, where the patriot dwelt; Great Marlow, where Shelley was inspired; Stoke Pogis church-yard, made famous by Gray's "Elegy," as well as his tomb; Burnham Beeches, where Grote wrote, are all in its neighborhood.

BOOK NOTICES.

LIFE AND HER CHILDREN. Glimpses of Animal Life from the Amoeba to insects. 8 vo. illustrated. By Arabella B. Buckley. New York: D. Appleton & Co. San Francisco: James T. White & Co., 23 Dupont St.

A better attempt at popularizing Natural History has seldom been made than is found in this little book of three hundred pages. It is evidently written by one to whom all forms of life are a fairy land of science, and in a style both attractive and instructive. It illustrates an excellent method of teaching elementary zoology by dwelling upon structures and functions with which the young student may easily become familiar. It is, of course, not exhaustive in its treatment; there is no tediousness of detail, and few scientific names are employed in the general text. The author follows the best and latest authorities, and in her discussion chooses the most striking characteristics and most interesting species. "Life and Her Children" are included in seven great divisions. In the first are the slime animals—protozoa. The second contains the jelly-fish, the sea-anemones and the coral-builders. Here, too, are the sponges, "forming a kind of separate group, hovering between the first and second. The third has the star-

fish, sea urchins and sea-cucumbers, the fourth the worms, the fifth the mollusks and the sixth the articulates. The seventh comprises the vertebrates, "a division which has struggled side by side with the other six and in many respects has won a position above them all, whose discussion will claim a separate volume." The philosophy of this little book seems to be the necessity for effort and the adaptation of means to ends. Although no effort is made to advocate any special theory, the tendency is apparently in favor of evolution and the survival of the fittest.

The illustrations are excellent, the language and style clear and comprehensive, and the reader finds himself interested throughout. There are some minor faults in expression, as the "quintillion," (1,000,000,000,000,000,000,000,000) and "tail" for the body behind the thorax; "hark back again" for return, etc. A thorough acquaintance with this little volume will give one a fair knowledge of the orders of animal life therein discussed, and it will be acceptable to teachers, not only for classes beginning Natural History but for those more advanced.

The time must surely come when our system of education will require a stricter in-

vestigation into the objects of every-day life; when the child, seeing the myriad forms existing in organic and inorganic nature, will be taught concerning them; when the perceptive faculties shall be more thoroughly trained, and through them the reason and judgment be developed into intelligent thinking. To all who will use it, "Life and Her Children" will be found to be a help in the right direction.

HARPER'S SCHOOL GEOGRAPHY. Pacific Coast Edition. 1881. New York: Harper & Bros. San Francisco: A. L. Bancroft & Co. Retail price, \$1.50. 156 pp. Pacific Coast Matter, 28 pp.

That the teaching of geography is something more than a mere recital of localities, is nowhere more clearly demonstrated than in the series of geographical works of which this is a notable type. It is easy to see it is such text-books as this that have ushered in the "new era" of school books. They attract the teacher, and are a never-ending source of interest and enjoyment to the pupil.

It is impossible within our limited space to enumerate the various excellences of this book. By its complete local department, well illustrated with accurate maps, it is in full accord with the modern theory of geography-teaching, *i. e.*, that no knowledge of the earth's surface is complete that does not begin with an intimate acquaintance with the student's own home.

The treatment of the physical geography of each grand division by itself, then following with the political geography of that division, commends itself as logical and of the highest utility. To the chief points of physical geography thirty pages are devoted.

Especially valuable are a double page map of the commercial products and ocean commerce of the world, and five maps of the United States, showing first, physical features; second, distribution of rain, and relation of vegetation to moisture; third, grouping map; fourth, political map; and fifth, industrial and commercial map. The illustrations, which are numerous and of great variety, are artistic and beautiful in the highest sense. Typographically and in binding, the book leaves nothing to be desired. If our description has been warm, we are satisfied teachers will find that an examination will fully justify our approval.

BOOKS RECEIVED.

The following books have been received, and will be reviewed on our July number. The pressure of official matter in our columns this month necessitates the delay.

From **JAMES T. WHITE & Co.**, 23 Dupont Street, San Francisco:

THE ART OF SCHOOL MANAGEMENT. By J. Baldwin, President of the State Normal School, Kirksville, Mo. New York: D. Appleton & Co. 500 pp. Price \$1.50.

From **A. L. BANCROFT & Co.**, 721 Market Street, San Francisco:

A GRADUATING SYSTEM FOR COUNTRY SCHOOLS. By Alex. L. Wade, Boston: New England Publishing Co. 451 pp. Price \$2.

REMINISCENCES OF THOMAS CARLYLE. By James Anthony Froude. New York: Harper's Bros. 337 pp. Price —

LITERARY STYLE and other Essays. By William Mathews, LL. D. Chicago: S. C. Griggs & Co. 345 pp. Price \$1.50.

A NAMELESS NOBLEMAN. Round Robin Series. Boston: James R. Osgood & Co. 369 pp. Price \$1.

FIRST LESSONS IN NATURAL HISTORY AND LANGUAGE. By Prof. B. F. Tweed, late Supervisor Boston schools, and L. W. Anderson, Master English High School, Boston. New York: Harper & Bros. Plain copy, 165 pp., price \$0.50; teachers' edition, 207 pp., price \$0.75.

From **JULIUS A. HOFFMAN**, 210 Montgomery Street:

THE READER'S HANDBOOK OF ALLUSIONS, REFERENCES, PLOTS AND STORIES. By the Rev. E. Cobham Brewer, LL. D. Philadelphia: J. B. Lippincott & Co. 1170 pp. Price \$3.50. A valuable book; indispensable in every library, and to every reader and writer.

From **IVISON, BLAKEMAN, TAYLOR & Co.**

SWINTON'S SUPPLEMENTARY READER. Supplementary to First Reader, Easy Steps for Little Feet; supplementary to Second Reader, Golden Book of Choice Reading; supplementary to Third Reader, Book of Tales; supplementary to Fourth Reader, Book of Natural History; supplementary to Fifth Reader, Seven American Classics and Seven British Classics, (separate books.) Edited by William Swinton and George R. Cathcart. The most beautiful and best adapted set of supplementary readers issued from the press. Will go with any series of readers. Every school library should have a dozen sets at least.

GRAMMAR SCHOOL GEOGRAPHY. By William Swinton. An entirely new and magnificent book. 118 pp. F. B. Gunn, agent with Cunningham, Curtiss & Welch, southwest corner Sacramento and Sansome Streets, San Francisco.

FROM VAN ANTWERP, BRAGG & Co., Cincinnati and New York :

NEW FRENCH METHOD. By Alfred Hennequin, M. A. 394 pp. The attention of teachers in cosmopolitan schools is called to this book. It contains some new and striking features.

COMPARATIVE GEOGRAPHY. Translated from the German of CARL RITTER by William L. Gage. 220 pp.

GEOGRAPHICAL STUDIES. Translated from the German of CARL RITTER by William Leonhard Gage. 356 pp.

From MACMILLAN & Co. London, and 22 Bond street, New York. San Francisco : A. L. Bancroft & Co. :

THE ENGLISH POETS. Selections, with critical introductions by various writers, and a general introduction by Matthew Arnold. Edited by Thomas Humphrey Ward, M. A. In four volumes : Vol. 1, From Chaucer to Donne. 566 pp. Vol. 2, Ben Jonson to Dryden. 496 pp. Vol. 3, Addison to Blake. 608 pp. Vol. 4, Wordsworth to Dobell. 626 pp. This is a student's edition, and is the best for our school libraries which we have seen.

LITERARY NOTES.

Education for May-June contains eleven articles and five editorials. The former are on National Aid to Education, Educational Principles of the Kindergarten, The Collegiate Education of Girls, Graphic Science, Common Sense in Classics, Public School System, Eastern Colleges for Women, Relation of Public Schools to Morality and Religion, Teaching English, Boston Latin School, and a sketch of James Manning, D. D.

Mr. George Cathcart has been admitted a partner into the well-known publishing house of Iverson, Blakeman, Taylor & Co. of this city.

In the June *Popular Science Monthly* articles worthy of special notice are: Physical Education, by Felix L. Oswald—Clothing; The Value of Our Forests, by N. A. Eggleston; Production of Sound by Radiant Energy, by Alexander Graham Bell (illustrated); The Development of Political Institutions, by Herbert Spencer—(VII) Compound Political Heads; Degeneration, by Dr. Andrew Wilson (illustrated); The Primeval American Continent, by L. P. Gratacap.

In the June *Atlantic Monthly* there is the following table of contents: Over the T'other Mounting, by Charles Egbert Craddock; The Indoor Pauper—A Study, by Octave Thanet; A Spring Opening, by Edith Thomas; Bergen Days, by H. H.; Felicissima, by Eliza Calvert Hall; Who Lost Waterloo? by John C. Ropes; The Portrait of a Lady, (XXIX-XXXIV) by Henry James, Jr.; Change; French Tragedy, by Richard Grant White; Friends, A Duet, (XIV-XV) by Elizabeth Stuart Phelps; A Taste of Maine Birch, by John Burroughs.

Mr. Howells, in resigning the editorship of the *Atlantic*, evidently means to carry out his plan of devoting himself assiduously to authorship. He has just put the last touches to A Fearful Responsibility,

which, although covering as many as forty-two of *Scribner's* pages, will be given complete in two numbers of the magazine, namely, those of June and July. The scene of this story is laid in Venice. Mr. Howells is now said to be busily employed upon a longer serial story for *Scribner's Monthly*, and has in contemplation other literary enterprises whose scope has not yet been announced.

In the June *Harper*, among other articles we have the following: The White Mountains, by Samuel Adams Drake, with eighteen illustrations; Our Rubby-Throat, by Mrs. Sara H. Hubbard, with ten illustrations; A Neglected Corner of Europe, I. Lisbon, by Mrs. Lizzie W. Champney, with thirteen illustrations; Ballads and Ballad Music Illustrating Shakespeare, by Amelia E. Barr, with two illustrations; Anne, (a novel) by Miss Constance Fenimore Woolson, with one illustration; The First Settler's Story, (a poem) by Will Carleton, with one illustration; The Trial of Jeanne D'Arc, by James Parton, with three illustrations; A Laodicean, (a novel) by Thomas Hardy, with one illustration.

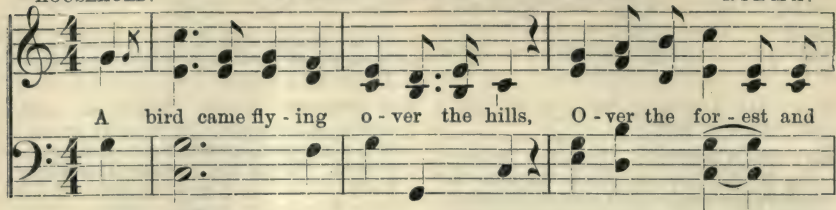
The Supreme Court of New York has granted the order to change the name of the corporation of "Scribner & Co." to "The Century Co.," the order to take effect on the 21st of June. The July issues of *Scribner's Monthly* and *St. Nicholas* will have the new corporate imprint.

Col. Waring's second paper on The Sanitary Conditions of New York, will appear in the June number of *Scribner*. It is said that the author goes into every detail of the subject, and grapples fearlessly with the most difficult parts of the problem. His recommendations, if carried out in their integrity, would, he believes, constitute "a complete remedy for all the remediable sanitary evils of the city of New York, so far as they relate to its soil, its streets, its houses, or its water supply. They involve nothing that is impractical, of improbable value, or uncertain effect, or undue cost."

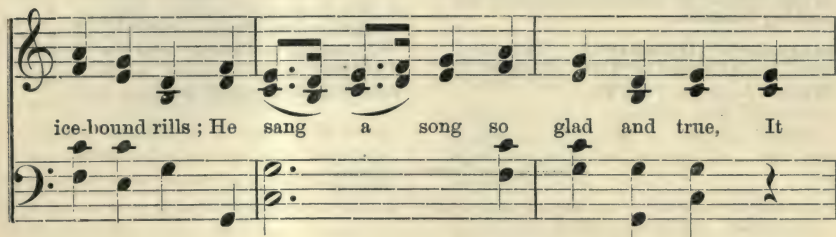
Words from
"HOUSEHOLD."

WILD BIRD'S SONG.

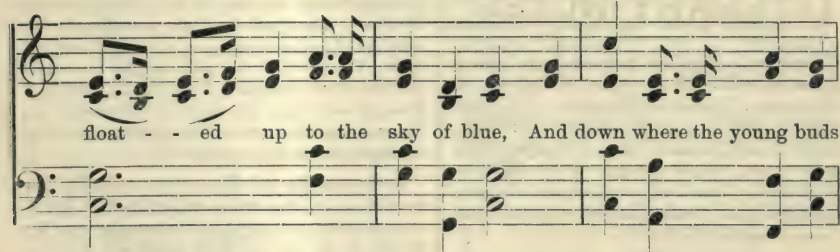
Music by
RIEMA.



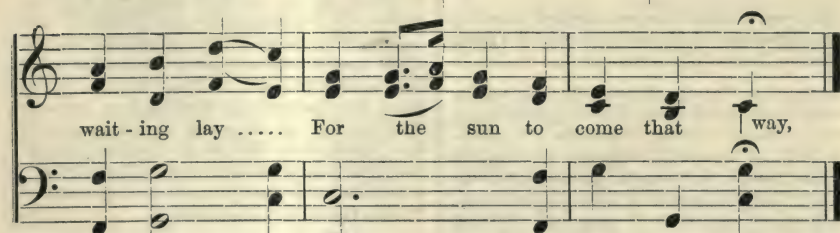
A bird came fly - ing o - ver the hills, O - ver the for - est and



ice-bound rills; He sang a song so glad and true, It

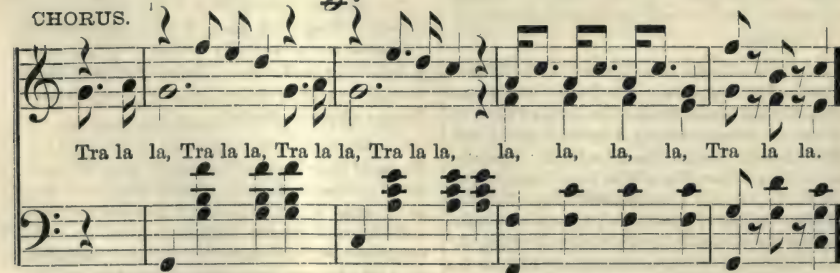


float - - ed up to the sky of blue, And down where the young buds



wait - ing lay For the sun to come that way,

CHORUS.



Tra la la, Tra la la, Tra la la, Tra la la, la, la, la, la, Tra la la.

2.

3.

Then he darted down to a brown old tree,
Singing the news right merrily: [bloom,
The grasses will grow and flowers will
For spring is coming, coming soon,
Be glad! be glad for the news I bring, so
"Welcome the coming of the Spring."

CHORUS—Tra la, la, &c.

Hark! there's a stirring among the trees,
A breath of flowers in the whispering breeze
It comes to us from the balmy South,
With fragrant kisses in its mouth—
Bloom ye flowers, ye wild birds sing!
Sing the coming of the Spring!

CHORUS—Tra la, la, &c.

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MORAL INSTRUCTION IN THE COMMON SCHOOLS.—HOW BEST ACCOMPLISHED.

ARTICLE I.—MORAL INSTRUCTION.

BY EUOTE.

[Premium Essay.]

“Self-knowledge, self-reverence, self-control—
These three alone lead life to sovereign power.”

IT was the boast of Cæsar Augustus, that he found Rome built of brick, and left it built of marble. Thus tersely did the *Imperator* express the material improvement in the world's center, which his proud reign had witnessed. Yet, though the pen of the poet and the chisel of the sculptor proclaimed his munificence and perpetuated his glory, the downfall of Latin civilization then began, for then it was that brutalizing forces first overmastered moral worth. Then it was that all lofty ideals and humanizing influences fell before the advancing tide of luxury and lust of pleasure that afterward swept in destruction over Roman forum and Roman pride; and, for the third time in the world's history, the brow of Divinity seemed dark with the frown of divine indignation.

“History,” says Montaigne, “is precept teaching by example”; and that lack of moral instruction entails death upon the moral life of a nation, is the

lesson to be learned from this precept, which has all the force that experience can give and illustration demonstrate.

In writing upon "moral instruction," it is more with a desire to awaken thought upon the subject, than to lay claim to special originality. The intent is simply to remind many of our profession of that which they already know. And should the suggestions in this article be questioned or disagreed with, one of the objects for which the essay has been written will have been accomplished. Acquiescence is not always satisfactory; and though it is easier to assent, it is sometimes better to deny, and sustain a preferred view by clearer proof.

Of late years science has conferred upon man an additional power, a power once believed to be an attribute of the Omnipotent alone—the gift of prophecy. It is within the province of the mathematician to announce with all the certainty of prophetic knowledge and all the exactness of known truth, the recurrence of certain phenomena in the heavens; and within the unquestioned power of the physicist to determine the changes, composition, and condition of matter in the surrounding worlds. It is no less the prerogative of the mental philosopher to prophesy regarding that equally great area, the realm of the mind.

The three natural powers of the mind are will, memory, and understanding. Education is the evolution of these mental faculties. "From chaos sprang cosmos," in the long-gone æons of ages that were illimitable in their extent before the twilight dawn of our planet's recorded history. As in the material, so in the mental world; and the great marshaling and arranging of forces is going on every day, on as relatively grand a scale, in the brains of that grand army of the republic that daily files through the corridors of our public schools. Within each individual brain lies a dynamic force that may one day manifest itself in a static form of potentiality, preservative or destructive, as its original bias may tend. It is the province of moral instruction so to guide and direct the growth of moral perception, that it may see and realize the desirability, the beauty, the necessity, and the good sense of so living that all the good possible may be got out of life. Of all sentient beings, we, in these closing decades of the nineteenth century, have brought to its highest logical conclusion the idea of duty: That which we owe to others; that which ought to be done; therefore, that which is right to do. It is this sense of duty, this realization of obligation, this tacit acceptance of mutual responsibility, that we, as teachers, are called upon to educe. To the mind of youth, its necessity, harmony, and practical benefit can be rendered as incontrovertible as an algebraic axiom. Of its great importance it is not necessary to speak. Its effect through life colors all our motives and intensifies all our actions; and without due knowledge of moral obligation, the grandest gifts of mentality can never round to completion of their fullest normal development.

This being prefaced, let us see what "moral instruction" is. It is the due explanation of our social relations; a plain, clear exposition of the two-fold duty we owe to ourselves and to our fellows, and fitting illustration of its necessity and desirability. Concise in its elements, it is comprehensive in its

details; and brief though its outlines may be, yet, when properly submitted, the logical inference of the argument is conclusive. While the necessity of moral instruction is conceded by all, the manner of accomplishing it has always been a subject of discussion. Some claim that it requires a certain set form of religious teachings; others, that certain homilies upon religion should be delivered from time to time; others, with more show of reason, think that in our commonwealth a due observance of, and compliance with, section 1702 of the Political Code is sufficient.

California is in a state of transition. A generation ago a hundred thousand men came rushing to this coast. They fought, and gambled, and founded cities, and overturned mountains, and took great risks, and made great gains, and found their god and idol in the yellow earth, and left their influence upon the youth of to-day. Human nature is self-asserting and self-adjusting. All the agitation and turmoil that we see around us is as natural as the sounding of the foam-capped wave as it thunders down the beach. Of course, amid all this shifting, and settling, and finding of levels, social and otherwise, the common schools come in for a share of the common denunciation and adverse criticism. Among other charges is the owlish hoot, that our public schools are "godless." It must, with sadness, be admitted that the proudest works of man's hand and brain are manifestly imperfect. It is likewise open to grave doubt, whether, if ever a race of human angels existed, that race be not now extinct. But among our many "godless" yet glorious republican institutions, there is not one that is more godlike in its attributes and actual results than our common schools. Holmes happily says: "The mind of a bigot is like the pupil of the eye—the more light you pour upon it, the more it will contract." The simile aptly applies to those who are afflicted with that peculiar phase of ignorance which includes itself; who prate of "godless" schools and heathen rulers; and who, when foul sewerage, impure water, and typhoid fever cause a new slaughter of the innocents, talk solemn twaddle about "a mysterious dispensation of Providence." The omission in our framework of republican doctrine of all mention of religion is, of itself, the greatest proof of the high regard in which we Americans, as a people, hold true religion. We recognize its strength: that it needs no bolstering, no State recognition, nor State aid; that it knows no geographical boundary, and that it is so intimate a part of our national life, that liberty itself could not exist without it. Of this religion which all recognize, moral instruction forms an important part. That there are errors and shortcomings in many of our institutions cannot be denied. They are unavoidable. There are currents in the streams of time and of national life, that, though sometimes broken and temporarily checked, yet turn and double in their course with tremendous power and pestilential effect. Such currents are flowing noiselessly yet powerfully through our land to-day, and threaten to smother in hideous depths the fair growth of the century that has passed. To others may be delegated the work of turning aside these foul streams that poison the life-blood of the body politic. To the educators of the coming men and women properly belongs the work of preserving pure the sources from which the streams of national life are fed.

Astronomers tell us, that what we call time, is but the smallest segment of a mighty circle; that all the ages are but one tick of God's pendulum; that these comparatively brief periods of duration may be divided into cycles. In the realm of thought we are at present passing through a cycle of weighing, balancing, doubting, proving, discarding assumption and tradition, and demanding tangible facts. What men call a want of faith, is oftentimes the very opposite. It is a hunger for more, not less. The past is so narrow, the future grows broader and broader.

With this general prelude upon morals, moral instruction, and our common schools, the second and most important part of the subject—"How Best Accomplished"—will next be discussed.

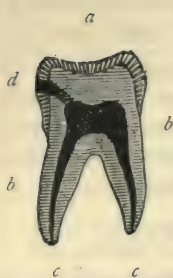
ON THE CARE OF THE TEETH.

ARTICLE II.

BY DR. W. H. ROBINSON.

[Suisun, Cal.]

WE shall now speak of the anatomy of the teeth, so far as that knowledge is necessary to their proper care, and we shall try to say the useful thing, that the text-books have left unsaid. We may also say something in direct contradiction of the text-books; so do not be alarmed if we do. It is quite probable that the dentist of to-day may know more about the teeth than the text-book maker of a quarter of a century ago, who was not a dentist. I noticed in a plaster anatomical model, intended to show the shedding of the baby teeth and eruption of the permanent ones, in one of our high schools, the bicuspid are represented as being shed, and molars being erupted in their place—an error that reflects little credit on —, and that would so confuse teacher and pupils, that they would not know the difference between the baby and permanent teeth. The text-books in vogue when I was a boy described the enamel as a thin membrane covering the crowns of the teeth, very liable to be broken off, and that hot or cold food or drink was apt to crack this enamel and make the teeth decay; and that we should be very careful in picking or cleaning the teeth to do it gently, or we would break the enamel and spoil our teeth. This is like saying to children when they are washing the dirt off their faces and hands: "Be careful, children! be very careful! Rub gently! the skin is very thin! Use water and towel very gently, or you will rub the skin off!" The danger is all the other way. Washing and rubbing the skin are just the means to keep it healthy. The skin will be sure to tell us before we rub it off. The same is true of both teeth and gums. They will be sure to tell us, long before we hurt them with toothpick or brush. Cut No. 1 is designed to show the anatomy of a lower molar tooth split in two.



This cut was made about forty years ago, and is badly afflicted with the errors of its time. The external layer *A*, is designed to show the enamel; but in a tooth of this class the enamel is often twice as thick as shown here. *B* represents the dentine, and *C*, the pulp or nerves, larger than natural. We want to call special notice to the fact that all that part of the tooth not covered by the enamel is covered by a thin membrane, the periosteum. This is one very important part of the teeth. The popular idea that disease of the nerve, *C*, is what always causes toothache, is an error. At least half the toothache, and nearly all the facial neuralgia that afflicts humanity results from disease of the periosteum, or covering of the roots of the teeth, after the nerve, *C*, is dead and gone.

Remember, then, that the enamel is not a thin covering, nor is it easily broken. We have never seen or heard even a single case reported by any dentist where the enamel has been injured by brush, toothpick, or any of the appliances used for cleaning teeth—except where tooth-washes have been used that contained some mineral acid. All acids act injuriously on the enamel of the teeth, and should never be used in cleaning them. We all know how sour fruit “sets our teeth on edge;” so after eating it, the best treatment is to give our teeth a good brushing, using soap, as the alkali of it neutralizes the acid of the fruit. The proper treatment to keep the enamel sound and healthy is to keep it polished perfectly clean and smooth all the time.

DISEASES OF THE TEETH.

We will only refer to the diseases that proper care will prevent or mitigate. Most persons know what decay or rotting of the teeth is. (See *D*, cut 1.) Many know their teeth to be decaying, and yet give little attention to it till the decay goes through the enamel *A*, and dentine *B*, reaches the nerve *C*, and then “O, dear, I have got the toothache! What shall I do?” That numerous class of advice-givers, “They,” say “Go and have it extracted.” So you go to the dentist; suddenly you discover a wonderful affection for that tooth; you don’t want it extracted. You will do anything, and pay any price, to have that tooth saved. The dentist looks at your tooth; perhaps finds it in a condition that makes saving an expensive and a very doubtful operation. But you say, “Doctor, I do hate so dreadfully to lose my teeth. Do save it if you can.” While down in your heart you hate that tooth, and wish it was—well, no matter, if only out of your jaw. We are not going to write dentistry; we will say just as little about it as we possibly can in telling how to take care of the teeth.

Take the case we have just described, where decay has reached the nerve, and no honest dentist will promise to save such a tooth. Such teeth may be treated and filled by the best dentists in the profession, and in a short time ache, and have to be extracted.

If you value your teeth and want to save them, do not wait till they ache before you go to the dentist, but go as soon as there is decay, or even a strong

indication of decay. All our soft tissues, and even the bones, when cut, broken, or diseased, get well by the natural process of healing; but the teeth, when once decayed, never get well, never heal. So when you discover your teeth decaying, remember it is absolutely certain that in a few months, or years at most, those teeth will ache, and be lost if let alone. So if you have any regard for your teeth, feelings, or health, go to the dentist and have the cavities, that decay has made, filled, before you have even a strong symptom of toothache.

A WORD ABOUT FILLING TEETH, AND THE MATERIALS USED,

may not be amiss here. As before stated, teeth decayed or rotten never heal or get well. Filling the cavities is the only treatment that saves the teeth from certain loss, and this should be done as soon as the teeth are slightly decayed. No matter how much you may dislike having your teeth filled, the only choice you have is to have them filled, or toothache—extraction—lost!

In regard to materials for filling teeth. Gold is quite generally used, and is best for many teeth, but not best for all teeth. Various alloys of metals preserve some classes of teeth better than gold fillings; so do some plastic fillings save frail teeth when hard filling would not. The best advice we can give is to go in time to some honest competent dentist, and trust to his judgment.

Dentistry as a professional science has grown rapidly during the past few years. Intelligent discrimination in materials for filling teeth, and modes of doing it, enable the dentist to save nearly all teeth that come under his care in season.

THE GREAT ADMIRAL.*

BY R. H. STODDARD.

GREAT men are few, but when
The world demands great men,
Either with sword or pen,
It does not lack them;
Nor they the iron will
That conquest cannot kill
For, crushed, they conquer still
All who attack them.

They triumph more and more,
And wiselier than before:
The warrior's reign is o'er,
For though victorious,
And crowned with fools' applause,
Unless the sword he draws
Sustain a noble cause,
He is not glorious.

Should Cæsar come again,
Or darker Tamerlane,
To fill the earth with slain,
Its banded nations
Would rise with sword and flame,
And blast him as he came,
And History brand his name
With execrations.

Not such thy fame, O Tell!
Whose arrows sped so well,
Nor Arnold's, when he fell,
But grasped in dying
The Austrian spears, that shed
His last life-blood, and fled;
Brave heart, ere he was dead
He saw them flying!

* This grand ode on the heroic Farragut will be found entire in *Harper's Weekly*, of June 11th, 1881.

Worthy of these, and all
Whom death could not appall,
Was our great Admiral,

Who thrice victorious
O'er men as brave as he,
Whom he compelled to flee,
Can never cease to be

Forever glorious !

What Greatness undertakes
She prospers in ; she makes
The Nelsons and the Blakes,
And makes them masters
Of stormy waves and winds,
Whose strength, which she unbinds
Prepares their daring minds
To face disasters.

She made this grand old man,
Whose first emotions ran,
As only sailors' can,
Direct to ocean :
A sturdy boy of ten,
He took his place with men
Who ploughed its waters then
With stern devotion.

'Twas not the lot of these
To scud before the breeze,
Or furl their sails at ease
In southern waters,
Where, slung in hammocks light,
They watch the sea-birds' flight,
Or dance on shore all night
With Beauty's daughters.

'Twas theirs to find the foe,
And lay his navies low,
And many a deadly blow
Was given and taken;
And theirs the grim delight
In many a bloody fight
To see the vaunted might
Of England shaken.

So bravely this young man
His great career began,
Which never backward ran
But, strong and steady,
Flowed on, as Ocean flows ;
For when his country rose
To smite her dearest foes,
His sword was ready.

His mortar fleet he moors
Along the wooded shores

Where Mississippi pours
His waters seaward—
Past bluffs, which ramparts crown,
And forts, where cannon frown,
And where fire-ships come down,
But drift to leeward.

Five days and nights they rain
A storm of shells, in vain ;
The foe replies again,
Like sullen thunder ;
'Tis neither dark nor bright,
By day a ghostly light,
A swift, black stream at night—
Torpedoes under.

But steadily, and slow,
Up the black stream we go ;
We pass the hulks below
Fort Jackson faster,
For peril waits us there,
And crashes through the air—
It meets us everywhere,
But not disaster.

For we go proudly by,
While all our guns reply ;
Their frightened gunners fly
To safer quarters,
So hot, and shot so well,
The shrapnel, and the shell—
The pounding showers of hell
From our dread mortars !

Beyond the forts at last ;
But danger is not past,
For coming downward fast
Their gun-boats meet us ;
They board us, three to one,
Gun almost touching gun ;
We board them, and they run—
They cannot beat us !

Pell-mell ! Flash answers flash,
Masts crack, and timbers crash ;
The maddened waters lash
The dead and dying ,
The smoke is rising higher,
The flame is coming nigher—
Huzza ! they're all on fire !
They're flying ! flying !

So on that April night
We fought the river fight,

And put the foe to flight,
 And held the river :
 If they were overthrown,
 The might was not our own—
 The hands of God alone
 Such blows deliver !

* * * * *

Ay ! For there is not one
 Can do what he has done ;
 And, History, greater none
 Thou consecratest.
 Immortal honor, then,
 To this, our man of men,
 Whose soul is greatest when
 Our need is greatest.

A MARTYR TO ART.

BY CLARA G. DOLLIVER.

IN the midst of a fertile plain, between three fair rivers, is situated the ancient and sturdy town of Bologna—" *Bologna la grassa !* " famous for its wars, its leaning towers, its school of art, its sausages, and its freedom from beggars.

In neighboring Padua, wandering tourists are pounced upon, dogged, torn to pieces, martyred by a horde of one-eyed, two-eyed, sick, well, lame, and lively beggars, each one urging his or her particular claim to your benevolence in a manner distracting to people with the organs of sight and smell well developed. But in Bologna all is peace; whether it is the sausages or the general prosperity, the traveler cares not, when in three days he hears but once the melancholy whine of "*Poveri.*"

Among its ancient, time-stained churches, is one, beautiful within with frescoes, gilding, statuary, paintings; named for St. Domenico, who rests there, guarded by two wonderful torch-bearing angels, kneeling on either side as though awaiting the resurrection day.

Under its pavement stones sleeps young King Enzo, who died a prisoner in Bologna, and thus ended a life of sorrowful romance; and in the Chapel of Roses lie Guido Reni, and fair young Elisabetta Sirani—a victim to envy, a martyr to art.

Around the valueless altar-piece is a frame set with small pictures, now blackened with age, from the cunning right hands of the two who lie buried under the stones, careless alike of praise or detraction, of envy or honor.

Elisabetta Sirani was born near the middle of the 17th century, in this rich, bustling old city of Bologna, and grew there to womanhood, fairer and better day by day. Her contemporaries, not too much given to appreciation, praise her filial affection, her gentleness, her loveliness, her wonderful genius, and regard her as an ideal of perfection. The highest dignitaries, pompous old fellows as they doubtless were, felt themselves honored in visiting the studio of the modest young artist of fifteen; they compared her to the most celebrated painters of her day, and declared that her pictures combined the most opposite qualities with a harmony that was the wonder and admiration

of all who beheld them. Time, which proves or disproves all things, has not sustained their verdict; the artist has lost prestige, but around the *woman* lingers the aroma of a romance so real, so sad, that it must be a hard heart which finds no place for her; and there are few hearts which neither forebode nor remember suffering.

Of all the powers in the busy, powerful Bologna of that day, love and jealousy were the strongest, and both attacked the citadel of the gentle young artist's heart. She met the latter with sweet fearless eyes, and it fell back abashed; but love attacked her unawares, took her captive, played with her, tortured her, dragged her in the dust of humiliation, and flung her back to her work with nothing but her work to live for thereafter; upon the altar of her art she poured the offerings of her crushed and slighted love.

Her genius ripened; the soul she put into her work shone from it; Bologna was proud to call her her daughter; all Italy paid her honor; and with all she grew daily in goodness and beauty.

One morning, when her friends sought her, she was missing; an unfinished picture stood upon the easel; her brushes lay idle; her household duties were undone.

She was soon found; her lovely features, blackened and disfigured by poison, told all of the terrible tale ever destined to be told. An investigation was instituted by the authorities, but justice was blind, and deaf, and dumb.

The people cried for vengeance, and demanded that murder be called murder, though a gilded wretch had done it; but the people were of small account in those days, and a word from a high place hushed all troublesome questions, and poor Elisabetta, aged twenty-six, was buried by the side of Guido in the Chapel of Roses.

The day that she was laid there, all Bologna turned out to do her what little honor they might; the unfinished picture was carried behind her bier, the brushes and palette were buried with her; young girls, robed in white, walked on either side of her, scattering flowers; all wept who looked upon her beautiful features, black and distorted by the cruel drug that envy had mingled with her food. When the coffin was lowered the crowd in the church gave a smothered groan, half wail of agony. But the earth was heaped in, the pavement stones set, and peace now broods forever over this young martyr to art—"The Pride of Bologna."

Devise new and taking methods to smooth down the thorny path of knowledge. The attainment of learning is difficult at best, and we might as well strew the road over which the tiny feet must march with fragrant rose-petals instead of hard, flinty stones.

With firmness, common-sense, sympathy, an acute sense of justice and an attractive personality, the school-room, which is so often an irksome place of captivity, might be made a temple of pleasure, recreation, and sweetest recollections.

SLATE-WORK COMPOSITION.

POMONA.

I KNOW not whether the following is worthy the title of method, or not, but in my experience, it certainly has made the task of directing little ones, in their first attempt toward composition work, both easy and interesting.

Let real object-lessons be the foundation of their work; pictorials from nursery-books are best. The bright colors attract the eye, and chain the attention, and the simple objects pictured please the fancy, and are not beyond their comprehension.

The children need no formula—they would not understand one—but the teacher might be guided, thus:

First, have all the objects in the picture named, creating as much interest as possible while this is being done and supplying any omission. Then have the children relate anything that seems to be taking place in the picture, and describe the position of the objects.

Relate the story connected with it. It is well to take at least two lessons to *talk* about the subject. The picture may then be attached to the wall, and the slate-work begun.

Lesson 1. Write the *names* of everything you can see.

Lesson 2. Write how the *things* or *objects* are *placed*.

Lesson 3. Write anything you can see being done.

Lesson 4. Write all you can about the picture.

I believe any one who will *adopt* this way, and *persevere* in it, will meet with success.

MOMENTUM VS. THE PROFESSOR.

THE extent to which theory often fails in practice is furnished by a venerated professor, a most distinguished mathematician, whose works are still used as text-books in many of our institutions, and which occurred within the compass of our own experience.

He went to Bethel; on his return he spent the Sabbath in Lewiston. Monday morning he was told the horse was sick. Nevertheless, he started. The horse went a few rods, fell down, and broke both thills. He then sent his wife home, and also sent to Brunswick for another horse and carriage to take him and the broken chaise home.

When the driver came they lashed the two vehicles together. All went well till they came to the first long steep hill between Lewiston and Brunswick; on its summit they held a consultation. The professor had an exaggerated idea of his strength, and said: "Mr. Chandler, it is too much for the

horse to hold these two carriages on this steep descent; take the horse out; I will get into the shafts."

"Professor," replied Chandler, "the breeching is strong, and so is the arm-girth."

"But the horse, Mr. Chandler; it is too much for the horse. Besides being stronger, I know how to take advantage of the descent, and can manage it much better than the horse."

"If the horse can't hold it, you can't."

"Do you, sir, intend to place me, in point of intelligence and knowledge of mechanical forces, below a horse? I have made mathematics the study of a life-time."

"I have no intention to be disrespectful, sir; but I know that a horse understands his own business, which is handling a load on a hill, better than all the professors in the United States. I was sent up here by my employer, who confides in me, to take care of his property. If you will take the business out of my hands, and be a horse yourself, you must be answerable for the consequences."

The professor had a habit, when a little excited, of giving a nervous twitch at the lapel of his coat with his right hand.

"I," replied he, with the most emphatic twitch, "assume all responsibility."

The driver, in reality nothing loth to witness the operation, took out the horse, and held it by the bridle; and the professor, getting into the shafts, took hold of them at the ends. The forward carriage was just descending the hill, and the hinder one just a little over the summit, when the professor trod upon a rolling stone, which caused him to plunge forward, and increased the velocity of his load so much, that he was forced to walk faster than he desired, and exchange a slanting position—with his shoulders thrown well back, and his feet braced—which he had at first adopted, for a perpendicular one. At length he was pushed into a run; the carriages were going at a fearful rate.

At the bottom of the hill was a brook; on each side, precipitous banks. The professor was between Scylla and Charybdis, going nine feet at a leap. In order to cramp the forward wheel, he turned suddenly to the right. The shafts of the forward carriage went two feet into the bank, breaking both of them short off; the lashing of the hinder one slipped; it ran into the forward one, breaking the fender, and both vehicles turned over at the bottom of the hill with a tremendous crash, the learned gentleman describing a parabola—one of his favorite figures—and landing some rods away. He rose from the earth a dirtier and wiser man; knees skinned, pants torn, a piece of skin knocked off his forehead, and his best hat flat as a pancake underneath the hind carriage; and looking about him, exclaimed:

"Is it possible that I could have been so much deceived as to the momentum? It was prodigious!"

"I don't know anything about momentum," exclaimed Chandler, "but I know something about horses. I know it makes a mighty difference about

holding back a load on a steep hill whether the horse has two legs or four, and whether he weighs one hundred and seventy-five or two thousand two hundred."

It cost the professor \$37.50 to ascertain how much horse-power he represented.—*The Teacher.*

MISS JONES VISITS THE SCHOOL.

BY C. M. DRAKE.

YES, Mis. Smith, I've been to visit our school. I'd heard a good deal about the school one way and another and says I to myself "I'll go and see for myself, and then no one can tell me how it is." I started early in the morning and left a cold snack on the table for my brother, and intended to stay all day. I stopped in to get Mis. Jackson to go along as her boy goes to the school, so she would be sort o' 'quainted like. Mis. Jackson couldn't go but she kept up a steady stream of talk the moment I got there (I couldn't get a word in edgewise) and it was full 'leven o'clock when I got to the school-house. Where did you get that lovely collar Mis. Smith? I'm going to have one like it the first eggs my chickens lay. As I was a sayin' I got to the school-house and stopped in the hall a minute to look 'round. Yes, I spose it had been swept, but the broom was set in the corner *brush down*. Yes, *brush down* and a bran' new broom at that. That's the way the school money gets wasted.

But that wasn't the wust, for true as I live and breathe and draw the breath of life if there wasn't a comb and looking-glass hung up in that hall. Yes, Mis. Jones, a looking glass! Using the people's money to feed children's vanity on! I expect Miss White uses it as much as any one. I never could see why Sam Monroe thinks her so handsome.

I just took a peep into the glass to see if my bonnet was on straight and if my new sack set well, for I didn't know who else might come, and then I harkened a moment at the door to see if she wasn't whipping a boy or something, and then I knocked.

"Go and see who is at the door, Sarah," I heard her say, instead of coming herself as she'd ought to, let alone making servants of the children. I walked in and she give me a chair, and then went on hearing her class just as though she didn't have company.

It was a physic-ology class or some such a name. I mind me Mis. Jackson's boy said they studied physics at Miss White's school; and this was some doctor stuff or other. She had never a book in her hand to ask the questions out of, but she did have—what do you think?—a *Stick*! A great, long, pointed *Stick*! No one need tell me she uses moral suasion with that stick in her school-room.

After asking some questions, she pointed the stick towards a picture on the wall, and—Mis. Smith, I felt just like sinking right down through the floor

with shame. You never could imagine it! Such a *nas-ty* picture of a great *na-ked* man with not a stitch of clothes on, and with his stomach cut wide open *showing all his in'ards!* I just felt as if I was burning all over, and I could scarcely hear a word Miss White said. No, she didn't look flustered a mite. It would take a good deal to flustrate her.

John Young's boy was a-sittin' close by me and he leaned over and says he "A handsome fellow that one she's pointing at! Isn't he?"

"For the land sakes, whose picture is it?" says I.

"That's a picture of General Hancock just after he got out of the presidential fight. Awfully cut up wasn't he?"

I didn't much believe the boy, and just then Miss White said "Mary, you may take the pointer and we will review the bones," and she unrolled a picture of a great grinning skeleton. One view was all I wanted of it, but that big girl Mary Young had to stand up before all those big boys and point out the fellow's legs and his arms and his ribs and his sternum. I didn't dare look at her while she was doing it I felt so ashamed. It was downright immodest. Miss White asked her what often—yes, *often* Mis. Smith—what often pressed women's ribs in out of shape and the girl said "Tight lacing" before all those big boys. And John Young's boy whispered to me "Her feller's arm squeezes her ribs in too, sometimes. Don't they Miss Jones?" I felt like boxing the young tike's ears.

"What other bones do many women injure?" asked Miss White. Rufus Morgan says, "The bones of their feet by wearing tight shoes," and—if you believe it—the wretch glanced at my new shoes which aren't tight one bit as they are 5s and I can wear 4s real easy. Miss White kept her feet stuck out as though every body didn't know she scrimps her feet awfully to get on 3s. I wouldn't have her corns for anything.

"Tell about the limb-fat-ics" said Miss White, and out came another picture even horrider than the other two and just as much undressed. "No, the time is up," says she, just as I was a-wondering how many more nasty pictures she had. "Take the remainder of the stomach and intestines for to-morrow," says she. Ugh! It reminded me of hog-killing and the time we had scraping off the fat from the bowels and trying it out. They never taught such stuff when I went to school. I'd like to have seen the teacher who dared to mention ribs or legs to me.

That class was enough for me but the next one was the beatin'est class yet.

"Get our specimens, James," said Miss White, and the boy brought out of the cupboard—you'd never guess it in the world—a pail full of *boiled clams*. "The land sakes" thinks I, "what can she want with those boiled clams?" The boy gave one around to each scholar, and gave his teacher one, and me one. I took it out of politeness, and looked at it to see if they had salted and peppered it. But they wasn't to eat at all; they were only to look at.

She told us to look at our—"Mollusks" she called them—but they were only clams and the very commonest kind of clams at that. I looked, but all I saw was—a clam. She talked about their mantles (as though they wore clothes) and the crinkly-crosses of the shell and the clam's foot and how he ate with it

(I couldn't see any foot) and said he belonged with the oyster and some others to the—I wrote it down—"L-a-m-e-double-l-i-b-r-a-n-c-h-i-a-t-a." Isn't that a name to make a deacon sneeze? Then she told them to cut their clams open to look at his heart and other parts and she told John Young's boy to "dissect" mine as she called it.

"I'm a going to show you what you swallow when you eat clams" he whispered to me and I felt like puking, for I had eat a mess of clams that very morning. Pretty soon a boy pulled a real handsome clam out of his pocket and asked Miss White the name of it. She said it was a *pecten* because it looked like a comb and *pecten* was Latin for comb. It did look a little like my aunt's mother-in-law's tortoise-shell comb, she used to wear. "The whole name is *pecten equi-saleratus*" said Miss White.

"I've brought you those cut-worms, Miss White," said another boy.

"Massy on me! What can she want with cut-worms" thinks I. But when she opened the box there were two brown butterflies with pins stuck right through them cruel as could be. "Yes, this is the cut-worm" said she, and then I left in disgust. To say those butterflies were cut-worms in the face of one who had husked as much green corn as I have, was too much.

"These are not butterflies" were the last words I heard.

Wont Sam Monroe get bit if he takes up with Miss White? You just drop him a hint that there are persons who know cut-worms from butterflies if they can't tell the name of every rib in his body.

REGULAR ATTENDANCE.

FROM KELLOGG'S "SCHOOL MANAGEMENT."

THERE are various ways to create an interest for a time in regular attendance; those actually used will be given. A lady had a large primary school, and the attendance was so irregular that she became much discouraged. She had asked a boy to do some errands for her on Saturday morning, promising him a handsome knife. She was surprised when he told her he could not give her a moment after nine o'clock. Upon inquiry she found that a little company of boys met at that hour on each Saturday "to train"—that is, to follow a drum. If they were not punctual they lost the pleasure; if they were not regular in attendance, they were not permitted to belong to the company. She determined to profit by the lesson.

She got a drum and flag and made up a military company of those who had been punctual during the week. A cap gaily decked was fitted up for the captain, and he had a pretty sword; there was a drummer and a color-bearer. At the close of school on Friday, the company was formed and marched around the room; she reviewed them, and a suitable song was sung. The flag was then put above the class-list that showed the best attendance—each

class having its list neatly framed. The result was a wonderful excitement, and by tact she was able to use this method for years, noticing no diminution of interest. It accomplished what scolding, threats, and rewards had failed to reach.

In the New York schools, the pupils who have been punctual during the week are permitted to go home an hour earlier on Friday, but this is a stimulant that is not to be defended. It says to the pupil: "The school-room is a prison; I will shorten your term if you behave well." It would be far better to add some attraction for the whole, or for the punctual.

A teacher who has been quite successful in a difficult position found it was a great aid to have a series of planned exercises for the morning. He selected some chemical and mechanical experiments for himself, and gave his scholars a part to perform. He began with having a "committee on morning exercises"; and they were charged with the duty of having something interesting to do or say, or to invite some one to visit the school. One result was the procuring of apparatus of a simple kind, and another of an extensive museum. An experiment that never failed to please was "the electrical shock"—it was given from a machine made by one of the pupils. From the diary kept by the teacher I will briefly gather the "exercises" of a single month:

- Nov. 1, Exhibition by C. H. of a small alligator.
- " 2, Stories by the boys and girls about alligators—their habits, etc.
- " 3, Exhibition of a dollar steam-engine by P. L.
- " 4, Another exhibition of the steam-engine, and a drawing on the black-board to show how it went.
- " 5, An address by Rev. Mr. G., who had been invited by the committee. He gave an entertaining address, as he knew the object.
- " 8, Exhibition of an electric machine, made wholly by W. L., one of the pupils. By the Leyden jar quite a shock was given to the entire school.
- " 9, A piece of myrrh was presented by Mrs. S. This led to the subject of a museum, and a committee was appointed to report.
- " 10, The "museum committee" reported in favor of a museum, and seven "curators" were appointed.
- " 11, A piece of the rock of Gibraltar was presented by Mrs. C., and an engraving of the fortresses was on exhibition also. Both went into the museum.
- " 12, An account of Gibraltar was given by several pupils.
- " 15, John W. exhibited his pet cat. She would allow a canary-bird to sit on her head. She performed a variety of feats, greatly to the delight of the school. The knowledge of the exhibition of "Pet Jessie" had crept out, and every pupil was in attendance, as well as several parents.
- " 16, Several large pictures cut from *Harper's Weekly* and pasted on cards were exhibited. It led to the discussion of a "picture gallery." A committee was appointed.

- Nov. 17, The committee reported in favor of the "picture gallery," and seven "trustees" were elected.
- " 18, A number of pictures were exhibited, and rules were adopted as to their being mounted on cards, and as to grouping historical scenes, etc., together, etc.
- " 19, This morning T. W. brought in his cousin, who played beautifully on his violin.
- " 22, This morning the violinist came again, and with Miss V. (an assistant teacher) at the piano, some new delightful music was listened to. About thirty of the parents were present.
- " 23, The principal gave the boys a talk about Columbus and his times.
- " 24, Two of the boys had an amusing dialogue.
- " 25, A balloon was inflated by C. S. It lifted a book from the desk.
- " 26, A set of pulleys was exhibited, made wholly by T. F. It was fastened to the ceiling and some experiments made.
- " 28, Several articles for the museum were presented, among others some Roman coins.
- " 30, The electrical machine was brought out, and much amusement created.
- Dec. 1, Rev. C. P. S. addressed the pupils on Rome—what he saw there. About twenty parents present.
- " 2, Some Guinea pigs were exhibited by G. P.

NOTE.—The "morning exercises" were not to be over fifteen minutes in length—the regular time was ten minutes. This plan was carried out for several years, and the effect was remarkable.

The absentees would ask "What was done in the morning?" The intention was to keep this a secret—the "managers," (consisting of six pupils and the principal,) had the matter in charge, and told no one what was to take place. So much of an interest was created that parents of the pupils came in frequently. The "managers" had some invitations printed, and when clergymen and others were invited to speak these were issued; they were signed by the "managers" in behalf of the school.

The effects of the plan were quite remarkable for good, nor does the principal remember any bad results. It led to a study of general knowledge. Out of 180 "morning exercises," twenty were upon current events, thirty were exhibitions, thirty were addresses, fifty-five were experiments, the rest were miscellaneous. The pupils purchased a *camera lucida*, by which pictures were thrown on a canvas—that is, any picture from a newspaper. The "museum" accumulated over 1000 articles, and the picture gallery as many engravings.

THE grinding over and over of a subject, after pupils have attained a fair knowledge of it, is nothing less than stultifying—killing out curiosity and the desire for knowledge, and begetting mechanical mental habits.—*Supt. John Hancock, Dayton, O.*

PERSONALITY IN TEACHERS.

BY EMILY TRACY SWETT.

IN selecting instructors too much stress is laid upon dry knowledge, while the higher qualifications of enthusiasm and attractive personality are too much neglected.

How true this remark is, and yet do we not often see this very evil of judging a teacher by his book-learning exclusively, going on before our very eyes?

A teacher, and especially a young teacher, finds it very difficult to muster up the warm, eager enthusiasm of her nature, when for the first time she enters the often cold, dark, cheerless, dusty, rusty, musty school-room, and to her bewildered gaze are presented thirty or forty wooden benches, each containing a staring, squirming, wriggling, mischievous morsel of a human being, which she is expected to train up in the way he should go, regardless of ways and means. The effect of the surroundings, if they are dull and cold, is death to personality. If she has the spirit of progressiveness and the faculty of invention strongly developed she will soon remedy this. The surroundings are generally the key to the character of a person.

People have talked and talked; people are preaching and preaching; and people will continue to suggest and suggest until the final judgment day, about ways and means of turning the too often prison-like school-room into a cheerful, home-like circle, surrounded by gay walls, plants, and flowers, and the whole air imbued with the spirit of a magnetic, warm-hearted, motherly teacher;—people have talked about this matter, and yet there are many who still refuse to drag their weary, fossilizing skeletons out of the old, deep rut of routine instruction. Why they decline to accept any suggestions that will make their bondage, as they term it, less irksome, is a mysterious problem. Teachers say they have not the means to transform their school-room into anything cheerful, cannot buy apparatus and decorations. Well, what did people do before us, when great minds had not invented maps, globes, philosophical and mathematical apparatus, and all the other appliances of a modern school-room? Aristotle drew his own diagrams, and made his own apparatus, and was he not a noble example of a live teacher? Your true teacher carries his school in his carpet-bag.

If your walls are bare and white, and send a cold shiver through your marrow every time you look at them, decorate them. Set the children, boys and girls, out of school hours, to drying and pressing ferns, wild flowers, vines, and leaves of striking outline. Make a large free arm scroll with a crayon upon the wall you intend to beautify. With pins secure each leaf or a double row of leaves all along the curve. But this is only the foundation, and the work looks crude and unfinished; so you must fill up the spaces between the leaves with delicate trailing vines, graceful ferns and airy grasses. Here you have a charming and artistic decoration with which you can cultivate the child's eye

for the beautiful, and from the component parts of which you can teach many inspiring lessons.

The simplest lesson would be one of form. The simple curve and the compound curve could be shown, and the children asked to name something else that possesses the same character. Drawing might be taught from this, also. I believe it is the only way to teach drawing, to transfer forms directly from nature.

After this a lesson in color might be given. Certainly a child will appreciate this color-chart which he himself has helped to make, more than the one with geometrical patches of doubtful tints pasted upon a pasteboard foundation covered with the finger marks of ages. For a recreation they might mix tints and hues with the teacher's own water colors.

Another lesson would be one in botany. While gathering these lovely treasures, they probably discovered many new facts about them. Make it now into a class exercise, and talk to them or let them tell you about the haunts, peculiarities of growth, different natures, and special seasons of the various plants. Thus they will be led to observe many things which they left unnoticed before, and they will learn to take a new interest in nature. Flowers have a great influence upon children. It is as a mother said to me not long since, when speaking of the four rough overgrown boys: "I am not alarmed about the way in which my boys will turn out when they are men, as long as they feel such a tender reverence for music, flowers, and their fellow-men!"

The last lesson I shall mention will be uses of plants. What golden, sweet memories the maple leaves will call up to the hot, restless captive of a warm June day. When you tell them of the process of making maple sugar, each child will probably beat his breast in ecstatic joy, and roll his eyes in all directions, and say "Ah-h-h," and want to know more about the sugar. And the oak; what boy has not hunted for birds' nests, and played stage-coach, and steam-car in the swinging branches of some fatherly old oak tree. Just think how many delightful legends there are about this one tree, and the inseparable mistletoe, and you can give a most soothing exercise to your poor little children some hot sultry day. It makes them cool to think of it.

In lessons like these, taken from this scroll on the wall, is a splendid field for originality to show itself.

Corn tassels, the ripe yellow heads of barley, wheat, oats, and Egyptian corn make beautiful dried bouquets, and one of these each side of your desk will make the platform look cheery, and will afford food for object lessons or compositions.

Compositions! There is the place for originality. Many people think that children of tender years are not capable of originating thought. Perhaps this is true, but I can see no reason under the sun why a child of average intelligence need hand in a composition written without thought, without punctuation, and without any recognizable beginning or end. Here is one that was handed to me once by an eight-year-old boy, who was a good talker for his age.

Subject. The hors.

"The hors is a animal he has a tale and four legs and etes hay and barly and ots and carots and bran and draws wagons and wears a sadel and my hos-ses nam is Jim and thats all i now about hosses."

This shows some observation, but nearly every word was misspelled, there were no capitals and commas, and periods were a minus quantity.

Good letter-writing should be taught all along through the school years. not stilted, high-flown, rhetorical letters; but interesting, easy, graceful letters. The following is a very characteristic letter from a boy who had been visiting in the country a few weeks to his anxious, fretting mother in the city.

"Dear ma—I got here all right and forgot to write before; it is a very nice place to have fun. A feller and I went out in a boat, and the boat tipped over and a man fished me out, but I was so chuck full of water that I didn't know nothin for a long while. The other boy is going to be buried Sunday if they can find him. His mother came up on the train last night and she cried awful all the time. A horse kicked me over and I have got to have some money to pay the doctor for sewing up my arm and setting my collar bone and mending my leg. We are going to set an old barn afire to-night, and I should smile if we don't have bully fun. I lost my watch and I'm very sorry. I shall bring home some mud-turtles, and some pollywogs and a tame wood-chuck and a beetle and a water-snake if I can get them into my trunk.

Your affectionate son,

JOHNNY."

When choosing subjects, tell them to get facts that the other children don't know. This will stimulate observation and inquiry. Give them common-sense topics, and don't expect the tiny, undeveloped brain of an eight-year-old child to grapple with the immortality of the soul, economy the source of wealth, faith, hope, charity, or any other abstract subject, that even some maturer minds make sad witchwork of. If it is possible, have a little garden. Let each child plant a different kind of seed, and watch and nurture it as it grows, writing a composition occasionally upon its progress and peculiarities.

Cultivate humanity in your pupils. In children this faculty is seldom developed and it does seem as if their delight to annoy was but a dying coal of the great fire of savage nature which in former ages gloated over the misery and agony of its tortured victims.

If you have a piano, play and sing to your pupils once in a while. Music is a most refining influence. Nothing is so soothing to the warm, impatient, wriggling children, as a touching, soft, sweet ballad sung by the teacher. It influences the children in another way, inasmuch as after the teacher has sung the scholars will take hold of their own little songs with much more vim, and will try to put some style into them, as she did.

The great thinker is seldom a disputant. He answers other men's arguments by stating the truth as he sees it.—*Professor Marsh.*

EDITORIAL DEPARTMENT.

THE REVOLUTION IN THE STATE UNIVERSITY.

THERE has been a revolution in our State University. For years the feeling has gained strength, that the institution was in too quiescent a condition. It existed—so men knew by inquiry—but its being created no ripple in the sea of our social and intellectual life; its existence was no factor in any of the movements of our social economy. Its president, Dr. John Le Conte—not only a finished scholar, but a great specialist in his line of the physical sciences—was too much the student and investigator to exert by means of his school that active, omnipresent influence in the commonwealth, which forms one-half the design and worth of a great university. The great mass of college-bred men, together with all intelligent people interested in the success of the system of which the University is the crown, have had this feeling for years. Only a keen appreciation of Dr. Le Conte's deep learning, a cordial regard for his high character, prevented an earlier consideration of the necessity for a change in the executive of the University.

At the beginning of this school year, the Regents were called upon to confront the problem of sustaining the institution with a diminished income. Added to this was a falling off in the number of students, and a general indifference on the part of the community.

The Advisory Committee of the Regents held frequent meetings, and discussed matters in all their bearings. The outcome was a report, which first separated the chair of physics from the presidency; second, declared vacant the chair of mathematics and some minor positions; third, equalized salaries, in some instances making reductions, which, on the whole, have saved about ten thousand dollars per year.

No sooner was this report before the people of the State, than the press took up the cry that the changes were actuated by political reasons. Nothing more unfounded and senseless could well be imagined. The men and newspapers that criticised most freely had themselves given expression for some years, by their comments on University matters, to the motives which induced the Regents at last to take decisive action.

However, *malgre* all opposition, the report of the Advisory Committee was adopted, and the Regents having received and accepted Le Conte's resignation, prepared to elect a new president. After considerable canvassing of the merits of different candidates, the Regents, by a vote of eleven to seven, elected Prof. William T. Reid, principal of the San Francisco Boys' High School.

The attitude of the press on this election is something peculiar and without precedent. Prof. Reid is a graduate of Harvard University. He has been a head assistant in the well-known Boston Latin School. His administrative ability has been tested and approved in the school superintendency of Brooklyn, Mass. Finally, his success in our Boys' High School has been such as to demonstrate the high order of his scholarship and ability.

With this record it would appear natural, logical, a matter of course, to select him for the one place next above that which he has already adorned. So undoubtedly must the Regents have reasoned when they chose Mr. Reid.

Amid a storm of adverse criticism, coldness, and opposition, that gentleman enters on the duties of his high station. The clouds, however, have already begun to lighten. Like a herald presaging the sunshine of success, comes a letter from the banker D. O. Mills, until recently a Regent of this same University, inclosing a check for \$75,000 for the endowment of a Chair of Social and Political Economy and Civil Polity.

Mr. Mills is determined, evidently, by his example to rebuke in a marked and unmistakable manner, the disposition on the part of the press to prejudice the results of the action of the Regents and impede President Reid's labors in the field of the higher education.

A FUNDAMENTAL DEFECT.

FROM all parts of the Union comes a cry bewailing the invasion of our schools by the political horde. In California also, especially in its metropolis, has this evil assumed its greatest magnitude. The "machine" is not content with naming Senators and Congressmen. It is not enough to dictate the appointments for the vast number of Federal and State officers. The Fire Department, the Police, the Health Board, and the Street Department, are all insufficient to provide for the swarms of hungry parasites that cluster around each professional "party manager." Hence, follows an onslaught on our schools. The supervision of the system is intrusted to men without judgment, without knowledge of the objects of the American free school, without that practical acquaintance with the details of school management so essential in every emergency.

The schools of San Francisco are now in a critical position. The turning-point has been reached. In fact, a backward step has been taken, which indicates either a long relapse into retrogression, or a bracing up for renewed progress.

In San Francisco, when the Board of Supervisors—the local Legislature—fixes the tax levy, there is every year a discussion over the school appropriation. Usually this is but for form's sake, but biennially, *just before election*, the controversy becomes serious. This happens to be election year. The present board, with but a few exceptions, has been especially distinguished for venality and extravagance. So, to make a little cheap political capital, to present a balance-sheet not all on the side of waste, this body—the worst that has misruled the city for twelve years past—begins and ends economy by cutting down the school appropriation nearly one hundred and eighty thousand dollars, or more than twenty per cent. from the estimates of the Board of Education.

Now, we hold that such an outrage could never have been perpetrated, had our school organization possessed the confidence of the community. Had educators been at the head of the system, clearly understanding all its details, spending their whole time in a close supervision of the schools and classes, with cool, deliberate judgment—in a word, thoroughly competent—the department would not now be in a most serious dilemma.

Everything is disorganized, everything insecure, because politicians have control in a matter which, by education, by natural tastes, and by reasons of associations, they are incapable of fully understanding.

Our readers will comprehend how pernicious is this political influence, when they see it embodied in the usual query: How will this measure affect my friends

in the department? Teachers and friends of the schools, who realize and lament this condition of things, can easily learn the remedy. Educational demagogues, no matter what their positions, must be discarded. The administration of school matters should be intrusted to those who have some practical knowledge of their details. Teachers themselves are greatly to blame for the evil straits into which the system is falling. It is owing to their divisions, their petty jealousies, their backbitings, and constant dog-in-the-manger policy, that they no longer exercise a perceptible influence in school management, and that the most suave and specious politician can worm himself into the highest places. And our teachers may depend on it, that on them will fall the odium and the loss when the intelligence of the community discovers their delinquency.

CHANGES AND PROMOTIONS.

THE opening of our schools brings with it some important changes. Prof. A. W. Oliver, principal of the Gilroy High School, by a unanimous vote of the San José Board of Education has been called to the superintendency of that city. This is the first time in the history of our California schools when a non-resident has been called to assume the management of an entire school department. Prof. Oliver's broad scholarship and high personal character make the honor a well-merited one. We know that the schools of San José under his administration will assume a rank second to none on the Coast.

Another promotion, which it gives us unalloyed pleasure to record, is the election of Prof. J. M. Guinn of Anaheim to the superintendency of the Los Angeles School. Prof. Guinn is one who, as scholar, teacher, or man, has no superiors and but few equals. With scarcely a dozen others he stands right out as a foremost educator—one of the men who do credit to our profession—in fact, whose life and labors are the bulwarks of our common schools against every foe. In what we say of Prof. Guinn there can be no disparagement of his predecessor in the city superintendency, Mrs. C. B. Jones, who has distinguished herself for the ability with which she has managed the schools, and the progress they have made under her supervision. The Board of Education undoubtedly recognized her services and worth in transferring her to the principalship of the high school, a position equal in dignity, and requiring the best scholarship and administrative talent.

Prof. W. W. Anderson, whose victory in Santa Cruz we noted last month, concluded to decline the position there. He assumes charge of the Berkeley High School, and Mr. W. H. Galbraith of that school goes to Santa Cruz. Prof. Anderson will soon give Berkeley what it needs—a fine high school; and Mr. Galbraith will do good and acceptable work with the Santa Cruz school.

Supt. Steel of Yuba has finally retired from the superintendency on account of confirmed ill-health. He was unable to live in the atmosphere of Marysville. He has retired to the mountains, where he owns a mine. His successor is H. C. Babcock, who has been his deputy for some time.

In Alameda County, Mr. T. P. Powers of Saucelito takes charge of the Centreville school in place of Mr. Yates.

A. J. Farley of Alviso has resigned, and is succeeded by ex-Supt. W. F. B. Lynch. Mr. Lynch is a man of rare talents, genial in his manners, and lovable in

nature. The people of Alviso are fortunate indeed to have his services, and we are exceedingly glad to welcome him again to the educational field.

Prof. M. M. Scott, who returned to this State recently from Japan, has accepted a good position in Honolulu, Sandwich Islands. The Hawaiians are favored in securing a man who in every respect is first-class. Prof. Scott could have remained in this State had he wished; and our Boards of Education made a mistake in not holding out the best inducements in order to keep him.

THE CLOSING OF OUR SCHOOLS.

THROUGHOUT the State generally there has been for the past year much interest in the schools. This is evinced by the large attendance at the commencement exercises, as well as by the fact, that never before have these exercises been so general. From every high school, every grammar school in the State, have issued a throng of graduates, who have evidently experienced a year of more than ordinary hard work on the part of teacher and pupil both.

From what we learn from the local press, through private correspondence, and from personal observation, we are assured that, outside of the metropolis, this has been a year of definite progress; that teachers have been stimulated, and learners advanced.

In this city the balance-sheet is not so encouraging. The examinations were fair—certainly not too difficult—and the promotions in numbers quite up to the average. Our personal experience and observation justify the assertion, that, while many immature and unprepared pupils were advanced, no competent ones were retarded.

But the test acknowledged and accepted for years was not deemed sufficient. Political influence was invoked, and promotions—not a few—were made, without the slightest regard for the verdict of the examinations.

We are not sorry this has happened. It lends point and force to our plea in favor of the abolition of the whole examination system for promotions.

INSTITUTES.

THE editor of the JOURNAL, together with the State Superintendent and Prof. Volney Rattan of the High School, held one of the pleasantest and most profitable Institutes at San Luis Obispo, in June. He there enjoyed a week in conference with an assemblage of the best teachers it has ever been his lot to meet in this State.

C. H. Woods—a Dartmouth man—who has the principalship of the San Luis schools; J. F. Beckett, the superintendent; Raines of Cayucos; some of the ladies, such as Misses Lucas, Osborn, Stivers and Richards—are men and women of whom there should be more in charge of our public schools.

In our next issue we shall have a full account of this and other Institutes.

CHANGE OF PROPRIETORSHIP.

WITH the first day of this month the entire proprietary interest of the JOURNAL passed by purchase to MR. H. P. CARLTON, who will conduct the business under the firm name of H. P. Carlton & Company. All business communications, orders, etc., will hereafter be sent to him. MR. ALBERT LYSER continues in his position as editor. Articles and communications in regard to the literary conduct of the periodical must be addressed to him.

NEW DISTRICT CLERKS.

THIS issue of the JOURNAL has been delayed until the latest possible moment, to the end that we might receive notice of changes in the office of District Clerk in the several counties of the State, resulting from the election for trustees, held last month. We have heard from comparatively few of the counties, but can wait no longer, and therefore mail this month from the list as so far corrected. We shall hope before our August number is ready for mailing to have full returns of all changes.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, Editor.

"BACK PAY."

As school trustee I write to you for advice, and will state the whole facts as briefly as possible. Last summer we hired a teacher, agreeing to pay her \$80 per month; and if she gave us satisfaction, and the funds were so as to justify it, we might raise her salary. There was no written agreement, nor was the length of time mentioned. After she had taught a short time, we raised her salary to \$90, as she gave perfect satisfaction, and the school was larger than it had been before.

Lately there have been inducements from other schools to her for next year. We trustees met and agreed that, if she would stay with this school next term, regardless of what funds we might have to pay a teacher with, we would pay her what State funds there are on hand, to the credit of this district, which amount to about \$125 per month for all the time she has taught. Of course, there was nothing binding her to stay another term, as we could make no contract beyond this school year.

When I drew the order for her salary for May, I drew it for \$250, as I was not sure that it would be legal to draw an order for teaching a certain month or months that had already been paid for. The superintendent—or rather, deputy—

refused to draw a requisition. Even after I had notified him of the action of the board of trustees, and gave her another order, in place of the one for \$250, calling for \$125—just the amount we had agreed to pay her per month—he refused to draw a requisition, and wrote me a letter, stating that he had placed it in the hands of the district attorney, and asking by what authority the board of trustees, without a demand on the part of teacher, raised the salary of a teacher? and where is the law or authority for board of trustees granting back pay?

Now, what I wish to know is this: Does not the board of trustees have a perfect right to pay a teacher \$125 per month, even if it is "back pay," when there are funds on hand to pay with? If we cannot use the State school funds to pay teachers, what is it to be used for?

Yours, very respectfully,

———, District Clerk.

In answer to the inquiry contained in the letter of ———, District Clerk of ——— School District, submitted to me by you, I have to say, that the board of trustees of the school district are authorized by law "to employ teachers * * * of schools; to fix and order paid their compensation, unless the same be otherwise prescribed by law, provided that no board of trustees shall enter into any contract with such employés to extend beyond the 13th day of June next ensuing." (Political Code, sec. 1617, subd. 7.)

I have not been able to find any law applicable to the above school district, which fixes the compensation of teachers therein, or which limits the trustees to any particular sum in fixing the compensation of the teacher in their district. They cannot make a contract with a teacher to extend beyond the 13th of June, nor make a gift of school money to a teacher under the name of back pay; but within the limits as to time mentioned in sec. 1617, the trustees may contract to pay a teacher any sum they see fit: which sum, of course, must not exceed the district school money for the school year.

A. L. HART,

Attorney-General.

ELECTION OF TRUSTEES.

You will remember the law changing the time for the election of trustees to the first Saturday in May was passed so late in the spring of 1880 you could not send me the blanks as early as usual. Although I distributed them immediately, they did not reach the trustees of ——— district in time to post the election notices ten days before election, as required by law, but they did post them five days before, and duly elected a trustee for the term of three years. The facts, as stated, were placed before me, and, there being no contest, I decided the election was legal, upon sec. 1595 of the School Law, which says: "If within five days of the election the trustees have failed to post notices required under this section, then any three electors of the district may give notice of such election."

At the regular election on the 4th day of June, 1881, a successor was elected to the trustee declared elected in May, 1880, on the ground that the election at that time was illegal, the notices not having been posted ten days, and that the trustees could not claim the right guaranteed to the "three electors" in sec. 1595.

The parties interested have agreed to submit the matter to you, and ask your construction of the above section of the School Law. Please send me a reply as early as possible, as they will wait here for your decision.

Yours very truly,

———, County Superintendent.

The letter addressed to you on the 8th inst. by —— is before me. In answer I would say, that sec. 1595 of the Political Code presents one of those instances of ambiguity which could never be accomplished by any persons other than a legislature. It first provides, that the trustees shall post notices of an election of trustees *not less* than ten days "before the election required under sec. 1593." It then provides that, "if *within five* days of the election the trustees have failed to post the notices required under this section, then any three electors of the district may give notice of such election."

The first part of the section, if it stood alone, would be construed to be mandatory, and, under such circumstances, the election would be void, unless the notices were posted at least ten days before. But the latter part of the section would seem to imply, that the legislative intent (if any existed) was to permit the trustees to post the said notices at any time not within the five days next preceding the election. After that time, the trustees having failed, any three electors, according to the language of the section, may give notice of the election at any time before the same actually occurs.

I am therefore of the opinion, that the election held in 1880, and mentioned in said letter, was legal and valid.

A. L. HART,
Attorney-General.

TIE VOTE FOR SCHOOL TRUSTEES.

In answer to the letter of ——, submitted to me by you, I have to say: 1st. That if the two persons running for the office of School Trustee received an equal number of votes, the request of one of those persons could not make the other the duly elected officer. Under such circumstances, there being no other person to fill the office, it would be proper for the County Superintendent to appoint an incumbent to the office of Trustee, to hold until the next annual election. 2nd. The loss of a certificate of election does not create a vacancy.

A. L. HART,
Attorney-General.

TRUSTEES FURNISHING SUPPLIES.

In answer to the letter of ——, referred to me by you, I beg leave to say, that not only are the trustees of a school district prohibited by sec. 1876 of the Political Code from contracting with the board of which they respectively are members, but it is a well-settled rule of the common law that no member of a board of that kind can contract with the other trustees as such.

A. L. HART,
Attorney-General.

UNITING DISTRICTS.

I know of no means by which two school districts can be united except by petition signed by a majority of the heads of families residing in each of the districts sought to be united, as provided in secs. 1577 and 1578 of the Political Code.

Where, however, an order has been made creating a new district, the order will cease to have effect, unless within four months after it is made school is actually opened in the new district.

A. L. HART,
Attorney-General.

USE OF SCHOOL MONEYS.

Will you please get and forward me the opinion of the Attorney-General upon the following points :

1. After an eight months' school has been maintained, may the trustees use the county funds remaining on hand for the purchase of organs or bells for the use of the schools, or for the payment of claims against the district outstanding, contracted in the purchase of organs or bells ?

2. Section 1621 provides that after an eight months' school has been maintained, trustees may use the moneys received from the State and county, and remaining on hand, for the payment of claims against the district outstanding. Section 1622, however, declares that boards of trustees must use the State moneys exclusively for the payment of teachers of primary and grammar schools. Which one of these sections governs the use of the State fund ? Can the State money be used for any other purpose than the payment of teachers, after an eight months' school has been taught, as provided in section 1621 ?

Respectfully yours,

———, Supt. Schools.

In reply to yours of the 14th inst., I have to say :

1. That, in accordance with sec. 1621, "if, at the end of any year which an eight months' school has been maintained, there is an unexpended balance, it may be used for the payment of claims against the district outstanding, or it may be used for the year succeeding." Sec. 1622 provides, that, while the State School Fund, except 10 per cent. for libraries, can be used for the payment of teachers only, the county fund may be used for any of the purposes named in the chapter. Sec. 1617, subdivision third, specifies as among the powers and duties of boards of trustees the power "to purchase school furniture and apparatus, and such other things as may be necessary for the use of the schools." The only question then is, are bells and organs "necessary for the use of the schools ?" This, of course, is largely a question of personal judgment. For myself, I should be glad if every school in the State could be supplied with an organ or a piano, providing always it could be done without omitting such essentials as maps, etc. I should, therefore, hold that school having been maintained for a length of time sufficient to give the trustees control of the balance of the funds, the payment for organs and bells would come within a legitimate use of such balance of *county funds*. The balance of *State funds* they have also acquired the right to use, but only for debts incurred on account of salaries for services rendered by teachers of grammar and primary schools, or for payment of such salaries during the next school year.

2. There is a seeming conflict, perhaps, between secs. 1621 and 1622, but I believe it will be found upon careful reading that none exists in fact.

My understanding of these two sections is, that no balance of either State or county moneys can be used by the trustees if a school has not been maintained eight months ; but that it reverts each to its original fund, and must be reapportioned to the various districts as so much State and so much county money. That, an eight months' school having been maintained, the trustees have the power to use that balance in the same manner, (and in that manner only) as they were empowered to use any of the State and county funds of which these are but balances, viz : the balance of State moneys, first, for the claims against the district for *teachers' salaries* ; and second, there being no such claims against the

district, to be carried forward for payment of *teachers' salaries* during the next year.

That the balance of county moneys may be used, first, for the payment of legal miscellaneous claims against the district; or second, carried forward for, as the law expresses it, "any of the purposes authorized in this chapter." As you desire the opinion of the Attorney-General, I will submit your letter to him also.

FRED. M. CAMPBELL.

Supt. Pub. Instruction.

I concur in the opinion expressed in the above letter.

A. L. HART,

Attorney-General, Cal.

TEMPORARY CERTIFICATES.

We have in our county a lady who has been teaching a primary school upon a temporary certificate, and who, by serious illness, was prevented from attending the last examination. The lady has given eminent satisfaction, and it is the unanimous wish of the board of trustees, and of the pupils and patrons, that she should continue in charge of the school. The board of education of the county in which she received her certificate has issued to her a new certificate upon the first one issued, though it had not expired. Now, can we not, in view of the lady's success, issue to her upon this *new* certificate another temporary certificate, to be valid until the next examination?

In answer to yours of the 6th inst. I have to say that, while the law says in so many words, (sec. 1543, subd. 7) "*provided*, that no person shall be entitled to receive such temporary certificate more than once," and not that such certificate shall be issued but once upon the *same certificate*—you yourselves must be the judges as to whether the circumstances of this particular case are such as to warrant the latter construction, as well as to the confusion, or rather, complications, to which such a precedent might lead if once established. The law, of course, is not designed to work a hard hip to worthy teachers, or an injury to the schools by the loss of their valuable services, but rather to protect both from charlatans, shirks, and incompetents, who resort to all manner of devices to avoid the exposure of their ignorance and incompetency. There are many of them in our schools already, and hosts more of them are trying to get in. We will hope soon to weed out, and tire out, and fire out the former, and to securely bar the doors, and watch the windows, and the man-holes, and the sewers, that the latter shall not get in.

As I said before, it is a misfortune to the school greater than to the teacher herself even, when the school loses even temporarily the services of a lady like the one whose case is in question; but it would be a greater misfortune if, by avoiding the former, a way should be opened for retaining or admitting incompetents.

We were never in a better situation than now to raise the standard of our teaching force, compel honest administration on the part of trustees, and to give the people of the State the greatest possible return in the intelligent training of their children, the lengthened terms of schools, and in other ways, for their liberal provision of means. The distribution of power favors it; the law favors it. The safest way is to keep strictly within the pale of the latter, for if we begin to depart, we shall soon be all adrift.

F. M. CAMPBELL.

USE OF SCHOOL MONEYS.

After stating the case of your district having voted, assessed, and collected a tax, the error of the assessor, etc., you submit to me three questions :

" 1st. Have the trustees a legal right to expend more than was voted for, or was collected ?

" 2nd. Have they a right to use our county fund for building purposes before an eight-months' school has been maintained ?

" 3rd. Have they power to dispense with one teacher when our school draws money for two ? "

1. I should prefer to have the opinion of the Attorney-General before replying to the first question, and for the purpose of obtaining it called at his office before commencing this letter, but found he had gone to Colusa on law business for a few days. Upon his return I will write you his view of it. In the meantime I give you it as my own opinion, for what it is worth, that the trustees should have confined their expenditures within the limits of the amounts collected, especially as this exceeded by \$236.39 the amount asked for and voted. It appears, however, that they have paid out by orders and warrants, which have been honored, \$462 86 *more than was collected*, to say nothing of the bills outstanding (\$251.71). Now, where did the \$462.86 come from? And this leads me to your second question. Concerning this there is no doubt.

2. Clearly, no. Section 1621, Political Code, as amended March 4th, 1881, provides as follows: "The boards of trustees and the boards of education must use the school moneys received from the State and county apportionments *exclusively for the support of schools for the school year, until at least an eight months' school has been maintained.*" The section then recites how any balance may be used.

Section 1622 prevents the use of State money, *at any time*, for anything other than teachers' salaries.

3. "Teachers," as used in section 1858, is only for the purpose of apportionment, and it may happen that, from a large census roll, a district may draw an apportionment from two "teachers"—that is, simply two "five hundred dollars," so to speak, or \$1,000—when, by a small attendance from any cause, only one actual teacher would be necessary. There is nothing in the law to compel the trustees to employ two. Having received funds for two teachers, and the necessities of the school by reason of large attendance requiring that two should be employed, the trustees have *no right* to employ but one to the disadvantage of the pupils, and if they do it for the purpose of saving the money for any other purpose, are morally, if not legally, guilty of a gross misappropriation of funds, and of a great wrong upon the children of the district.

FRED. M. CAMPBELL.

Section 1621, as amended March 4th, 1881, is in full force, and is mandatory.

The money apportioned to the various districts from the balances (1621) forms a part of the five hundred dollars to be allowed to each teacher of the year.

I agree entirely with your District Attorney, that the Library Fund remaining on hand should not be reapportioned. The object of the section, (1621) as amended, is to prevent trustees from closing schools earlier than eight months, (having sufficient money for continuing them longer) that they might use the money so saved for purposes for which the district should provide. The Library Fund is not subject to this abuse, being specially protected.

FRED. M. CAMPBELL.

SCHOOL JOURNAL.

Absence from home at the time of its arrival is one cause of the delay in replying to your letter of the 22nd ult., and another is, that I desired to institute inquiries concerning the irregularities of which you complained before attempting to reply. On the occasion of my last visit to San Francisco, therefore, I called upon Mr. Lyser at his office, and explained to him the object of my calling. He expressed surprise that so great irregularities did or could possibly exist in your county and one other, from the superintendent of which I also had complaint. The only way in which he could in the least account for such a state of things was the imperfection of the lists of district clerks, though he had, he said, exhausted all his power to have them entirely correct. I confess to being greatly annoyed that there should be just cause for complaint, and unless it can be removed, it would be far better to have no organ at all. I had expected that it would be a great aid to us all mutually, as a medium for regular and general communication among the seven or eight thousand school officers, and more than three thousand teachers; and so it will be, if it can be properly managed and distributed. To this end, will you kindly lend your aid, by keeping the publishers duly informed of all changes in the clerks of districts, their post-office address, etc.

I hope that all cause of complaint will be removed in the future, thank you for informing me of those in point, and beg that you will do so in future, should irregularities occur.

FRED. M. CAMPBELL.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN JULY.—*Mercury* is not favorably situated for observation this month, as he is in inferior conjunction. He sets with the Sun on the 11th, and during the remainder of the month in daylight. He is stationary among the stars on the 3rd, again on the 28th, and near the Moon on the 25th. *Venus* is a morning star, rising on the 10th at 2 h. 5 m. A. M.; on the 20th at 1 h. 50 m. A. M., and on the 30th at 1 h. 33 m. A. M. She is at her greatest elongation on the 12th, and near the Moon on the 22nd. *Mars* is a morning star, rising on the 10th at 1 h. 0 m. A. M.; on the 20th at 0 h. 33 m. A. M., and on the 30th at 0 h. 4 m. A. M. He is near Saturn on the 6th, near the Moon on the 20th, and near Jupiter on the 22nd. *Jupiter* is a morning star, rising on the 10th at 1 h. 15 m. A. M.; on the 20th at 0 h. 35 m. A. M., and on the 30th at 11 h. 54 m. P. M. He is near the Moon on the 20th, and near Mars on the 22nd. *Saturn* is also a morning star, rising on the 10th at 0 h. 2 m. A. M.; on the 20th at 0 h. 21 m. A. M., and on the 30th at 11 h. 37 m. P. M. He is near Mars on the 6th, and near the Moon on the 19th.

THE yearly value of the London smoke, which it is proposed to convert into useful products, is reckoned at \$10,625,000.

It is always safe to assume that somewhere in your waste-pipes there is or may be a place where sewage has lodged. It is well, therefore, now and then, to take a pound of copperas, dissolve it in a gallon or two of warm water, and pour the solution down the

waste-pipe of your basin or sink. There is no better disinfectant, and the cost amounts to nothing.

A QUANTITY of flour was exposed by a French experimenter to a pressure of 300 tons, reducing it to one-fourth its original bulk. A portion of it was then placed in cans and sealed, the same being done with some unpressed flour. A year afterward the cans were opened, when the unpressed flour was found to be spoiled, while the pressed was in excellent preservation.

FIRE-ARMS frequently burst when the muzzle has been accidentally closed with earth, snow, etc. Prof. Forbes's explanation of this fact is very simple. If the charge moved slowly, a very slight pressure of the air in the barrel would be sufficient to clear the muzzle; but as the charge actually travels with a speed more than the velocity of sound, the resistance offered by the obstacle becomes excessive, and the gun bursts. It has been demonstrated mathematically that the pressure generated by a plug of the density of air is seven and one-half tons.

VARIOUS remedies have, from time to time, been proposed to arrest the ravages of insects which destroy books and printed papers. There are various objections to the use of such antidotes as washing with a solution of corrosive sublimate in alcohol, exposing the books to the vapor of benzine, carbolic acid, hydrocyanic acid, or burning sulphur. Dr. Hagen has tried with success to meet the difficulty by keeping the infested volumes for an hour under the exhausted bell-glass of an air-pump.

PROF. TYNDALL'S ODD DISCOVERY—HEARING SOUNDS ON THE SUN.—Prof. Tyndall, of London, has just invented a new scientific apparatus, that, when properly used, gives most singular results, and shows that the wonders of the photophone have only just begun. The photophone is an instrument invented by Prof. Bell for causing a beam of light to convey a telephonic message to a distance.

In the new apparatus, a beam of light from a lime light, or even a candle, is thrown upon a common glass flask having a long neck. To this is fastened a rubber speaking-tube that may be placed to the ear, so that any sounds in the flask may be heard through the tube. Between the flask and the light is placed a circular disk of metal having narrow slots, or openings, placed like the spokes of a wheel round the edge. When the disk is at rest, the beam of light may pass through one of the slots, and fall on the flask. If, now, the disk is made to turn rapidly on its axis, the light will reach the flask in a series of flashes, as it shines through the slots one after the other.

Here the curious discovery comes in. When the flask is filled with a gas, or a vapor, say of sulphuric ether, common street gas, oxygen, perfumes, like patchouli or cassia, or even smoke, and the beam of light is made to fall on the flask in a series of alternate flashes, the operator, listening with the speaking-tube at his ear, will hear strange musical sounds inside the flask. The pitch of these tones will correspond exactly with the speed with which the disk is made to turn, and each kind of gas, or vapor, in the flask will give a different kind of note, some soft, some loud, and some very sweet and musical.

This is certainly the most remarkable discovery since the photophone, and it shows that light may be made the means of making sounds audible at a distance, even when the eye can see no difference in the light. It even suggests the idea that we may yet be able to hear the sounds of the fires raging in the sun. It may, indeed, be only a hint to yet more wonderful and unthought-of relationships between light and sound, which may be utilized as a medium of communication.

We have received from J. B. Lippincott & Co. a copy of the new edition of *Worcester's Unabridged Dictionary*—a magnificent work—a review of which is promised in the August JOURNAL. Also a set of Stickney's *Language Lessons*, from James T. White & Co., 23 Dupont Street, San Francisco. This series, which has already been warmly commended in the JOURNAL, has been adopted for use in many parts of the State, including this city.—[EDITOR JOURNAL.]

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

ALAMEDA COUNTY.

The County Superintendent has issued first-grade certificates to Miss Alice W. Cohen, Miss Bertha J. Vollman; and to Miss Mabel L. Griswold, of Alameda, a second-grade.

Mr. Keep has been elected to the principalship of the Alameda High School, in place of Mr. Craven. Mr. C. has gone East on a visit.

The annual exercises of the State Asylum for the Deaf, Dumb, and Blind, took place June 7th at Berkeley, and were of a most interesting character. There are now in the institution 140 pupils, about 60 of whom are girls. The pupil's ages range from 7 to 19 years, and represent 38 counties in the State.

CONTRA COSTA COUNTY.

Mr. Warren Abbott, for the past year principal of the public school at Antioch, has left for Sierra County to take charge of the books of the Ohio Gravel Mining Co., in which several Antioch citizens are interested.

An effort is being made to raise, by special tax, \$700, to repair the brick school-house in Antioch. It has been regarded by some as unsafe, wide seams showing in the walls.

SAN DIEGO COUNTY.

San Diego is to have a new school-house. San Diego has a kindergarten.

KERN COUNTY.

Jas. Stratton, formerly of Oakland, has been granted a first-grade certificate by the county board of this county. First-grade certificates were also granted to Miss Mary M. Muir and Mr. J. E. Thompson.

The school trustees are trying to raise, by special tax, \$1,000 for school purposes, there being no money in the treasury to credit of the school fund.

There were ten applicants at the recent examination for teachers. Five obtained certificates.

PLACER COUNTY.

Mr. J. W. Myrick, who has been teaching in the lower part of the country, has returned to Auburn.

SAN MATEO COUNTY.

The election of school trustees at Pescadero, resulted in the unanimous re-election of Mr. H. B. Adair. Mr. John Garretson was elected vice. Mr. E. W. Thomson resigned.

Mr. Turner, principal of the Pescadero grammar-school, reports thirty-five scholars ranking over ninety per cent. in scholarship and deportment for the month ending June 3rd.

In the four grades of the Half Moon Bay school there are 184 scholars. This school closed June 4th, for a two weeks' vacation.

The closing exercises of the Redwood City public school took place in the school-house on Friday afternoon, June 9th.

NAPA COUNTY.

Thirty-two applicants for teachers' certificates appeared before the Board of Education at Napa City, only three of whom were gentlemen.

Miss May Dixon, of the Putah school, reports 14 scholars ranking ninety and over in deportment, attendance, and scholarship, for the month ending June 10th.

Mr. Shortridge closed a successful term in the Berryessa school district, June 24th. Mr. S. is highly commended for his work in this school.

The public school at Calistoga is prospering under its present teachers, Mr. Weak and Miss Boyed.

At the last meeting of the board of trustees of the Napa school district, all the

teachers of the department were re-elected with the exception of Miss Ella Fogg. Miss Stills is elected to fill the vacancy.

The total number of scholars admitted to the Napa City schools is 704. Per cent. of attendance, 93; highest per cent. of any month, 96; lowest per cent. of any month, 89; number of days taught during the year, 190; number of teachers employed in the public schools, 11.

YOLO COUNTY.

The trustees of Fillmore school district have built a new school-house, and have \$600 still left in the treasury.

COLUSA COUNTY.

The trustees of Colusa concluded to submit to the voters of that district at a special meeting, July 5th, the question of issuing \$1,200 bonds to build and furnish a new school-house and repair the old one.

BUTTE COUNTY.

Miss Mollie Phillips of the Forest school district, reports 16 scholars enrolled; average daily attendance, 13; percentage of attendance and average number belonging, 92.

The Board of Examiners granted twenty-five certificates to applicants in the recent examination; three first-grade and twenty-two second-grade. There were twenty-six applicants. A Red Bluff paper says this number of certificates compared with the number of applicants is unprecedented in the history of education in this State, and thinks that the applicants must have been remarkable well-informed, or else the standard low, or the questions very easy.

SOLANO COUNTY.

Mr. L. Weinman, principal of Benicia public school, and his efficient corps of teachers, have wrought much for the good of the school the past year. It is hoped by those most interested, that there will be no change of teachers in the department for the coming year.

The Faculty of the Normal and Scientific School at Vacaville is as follows: W. P. Stevens, A. M., A. W. Sutphen, Miss Ella Graham, J. C. Kennedy, Theodore Ryhim-er, and T. J. Willis.

There are in the Benicia school district 550 school children between the ages of five and seventeen years, and 224 under five.

Messrs. Wallace and Story of Dixon, who are canvassing for subscriptions to the fund for the erection of a high-school building, have already secured over \$3,000—more than half the amount needed.

SONOMA COUNTY.

The public school of Petaluma will re-open Monday, July 25th.

YUBA COUNTY.

Owing to the lack of funds, the Smartsville public school has been closed. Mrs. Berry has a full attendance at her private school, and the select school under the charge of C. H. Doyle is also prospering.

Supt. Steele speaks in high praise of the schools at Junction, Oak Range, Camp-tonville, and Mill Creek. He says the system of instruction pursued in them is superior to any ever before in use in that section of the county.

The public schools of Marysville closed June 24th, to re-open October 3rd. The various departments were visited during the last week of the term by the school board. They expressed not only satisfaction, but great gratification, at the progress exhibited by the pupils.

The Linda district school—G. C. McDonald, teacher—closed June 17th, after a successful term of eight months.

NEVADA COUNTY.

The graduating exercises of Grass Valley high school were of unusual interest this year, some of the essays showing a refinement of thought and culture very creditable to the writers.

MONTEREY COUNTY.

Mr. P. H. McEwen succeeds Prof. Hitchcock as principal of the Salinas City school. Mr. McEwen is considered one of the best teachers in the State.

El Sausal school—Miss Eva Allen, teacher—closed June 10th. Miss Allen has accepted a position in Salinas City for the coming year.

LOS ANGELES COUNTY.

Miss Stella Thomas has a kindergarten in Los Angeles. She has been to San Francisco to order the most modern appliances.

Dr. W. Lindley recently delivered an address on the care and treatment of immoral children in our schools. It was highly spoken of.

The graduating class of the high school here has fared well this year. They have already had three receptions tendered them: One by the Ivy Club, one by the Alumni Association now forming, and one by the Board of Education.

Miss Birdie Cannon took the Lindley prize for the historical essay this year. It was considered the best essay written since the public schools were organized.

A new school-house, two rooms, folding-doors, is being built at San Gabriel. It has long been needed.

Mr. J. M. Guinn has been elected principal of the Anaheim school; Oscar E. Mask, teacher of second department; Mrs. K. M. Hare, of the third department; Mrs. A. Alward, of the fourth department. Mr. Guinn delivered the oration recently before the Convention of the A. O. U. W.

In the examination for teachers in this county there were forty-six applicants. Twenty-two failed in grammar and arithmetic; fourteen passed—one only obtained a first-grade certificate. Miss Mary Gower and C. Lindsay received first-grade certificates on educational diploma; Mrs. J. A. Foster and Miss Fannie Bennett received first-grade on life diplomas. Miss Sallie Finley on first-grade certificate; Miss Eugenia S. Jackson, first-grade on Normal school diploma, Pennsylvania; Mrs. S. W. Burke, first-grade on Normal school diploma.

The well-known Female Seminary at Napa has been purchased by Prof. D. W. Hanna, brother of Mr. John Hanna, of Anaheim. He has had a life-long experience in such institutions, and under his guidance this seminary will step to the front rank. Misses Julia and Laura Hanna, of Anaheim, will enter on their duties there, on the opening of the term.

NEVADA COUNTY.

The town trustees of Grass Valley have an ordinance framed prohibiting the use of tobacco by boys under fifteen years; also the sale of it to such youth. Santa Cruz has a similar ordinance we believe. It ought to be general.

Mr. Kennedy has been re-elected principal of the school of Nevada city.

SANTA CRUZ COUNTY.

A course of study for this county has been arranged by the Board of Education.

Miss M. K. Knapp, of the San Jose Normal School, has charge of the Mountain district. She proves to be a successful teacher. Their school library has had 50 volumes added to it, besides "Harper's Young People," "Wide Awake," and the "Nursery." These journals are stimulating the pupils in good reading. The teacher gives them a story to read, and closing the book she requires them to write on their slates what they can remember.

TEHAMA COUNTY.

There are forty-nine school districts, and 2,346 census children in this county. Ninety-seven above the number reported last year.

A new school district, to be called the "Last Chance" school district, has been established.

Cottonwood district has voted a tax of \$1,000 for school purposes, but its legality has been questioned.

Prairie district has voted \$340 for school purposes.

The editor of a paper in one of the upper counties has recently visited San Quentin. He says: We visited the library and school-room in charge of Prof. Cummings. Here the young boys go to school and are taught the common rudiments of the English language, and the convicts go to read on Sundays by consent. It is a shame and disgrace to see young boys of ten and eleven years of age sent here for two or four years, and made to associate with hardened criminals. There should be another place for these children. We saw here a

little boy only 11 years old, said to be the child of Belle Lynch, formerly of the *Mendocino Dispatch*, and his chum only twelve years old, who were sent from Oakland for burglary. Let our humanitarians study this subject, and devise some means of taking care of these children.

Tehama school district hopes to have a new school building. It is to be a frame two-story house, brick foundation, and mansard roof and tower. It will be an ornament to the town.

Eight teachers received first-grade certificates, and four second-grade, at the recent examination in this county. There were 24 applicants.

MODOC COUNTY.

The Adin school district, Big Valley, has voted to issue \$3,000 in bonds for completing a new school-house.

SHASTA COUNTY.

Redding is to have a new school-house.

SIERRA COUNTY.

Miss Jennie Ward has obtained a second-grade certificate, and will enter the ranks as teacher.

At the recent examination for teachers in this county, the Board granted first-grade certificates to L. L. Brown and S. N. D. Smullen, and second-grade to Misses Lizzie E. Ross, Josephine Lefevre, and Robert H. Sweetman, on examination; also second-grade to Misses Sarah G. Andrews, Norah H. Hardy, and Rose Evans.

MARIN COUNTY.

J. J. Schneider has been re-elected, for the third time, clerk of the Board of School Trustees. He has been much interested in the schools, and made them a close study.

The assessment roll of this county was written up by Miss Emily Damphier, and is said to be as perfect and handsome a book as ever graced the archives of a county.

Miss E. J. Thayer, recently teacher of the school in Black district, has left the State and is a resident of Newark, N. J. She is now Mrs. Morrow.

Mr. Galusha has gone to Santa Clara county as an agriculturist.

N. H. Galusha has resigned his position on the County Board of Examiners. He has been one of the most successful teachers in the county.

The Board passed the following resolution:

Resolved—That by the resignation of Mr. N. H. Galusha, and his departure from our midst, we have lost an earnest and efficient co-worker, and that our best wishes go with him to his new field of labor.

Mr. T. B. Powers has resigned as teacher of the school at Saucelito.

Mr. A. E. Kellogg has been elected principal of the school at San Rafael. The trustees, it is believed, have shown good judgment in this selection, as he is said to be a bright scholar, a good teacher—well-trained in the modern methods—cunning with young minds as well as old books. In the other room the old teachers were re-elected.

Saucelito school district has 158 children, by census. If it had two more, the school fund for the district would be increased by \$500.

The County Board has granted a first-grade certificate to Wm. C. Deal; and second-grade certificates to Misses Carrie Atherton, S. A. Robinson, Lizzie H. Folger, Abbie L. Rix, Isabel McKenna, and Mr. W. S. Rutherford. A first-grade was granted to Mr. N. H. Locke on a normal-school diploma and experience.

First-grade certificates were granted to Mrs. Julia Markley, and Mrs. Ida Wade, on educational diplomas. Miss Nettie Ruggles' second-grade certificate was renewed. The Board adopted Robinson's Shorter Course in Arithmetic, and Monteith's Independent Series of Geography; also Palmer's Book-keeping, Maury's Physical Geography, and Stickney's Language-books.

The Board is revising the course of study for permanent form, and selecting a list of library books and apparatus for district schools.

STATE NORMAL SCHOOLS.

The annual commencement of the State Normal School was celebrated on the 2nd day of June, in the hall of its new building.

Thirty-two young women and two young men received diplomas, having completed the three-years' course of study.

The Normal School opened in a room of the High School, San Francisco, in July, 1862. Prof. Ahira Holmes was the first principal. The school was soon removed to Music Hall, and afterward to Assembly Hall, at the corner of Post and Kearny Streets. Prof. Geo. W. Minns, H. P. Carlton, and Geo. Tait, successively presided.

In June of the year 1871 the school moved into its new and commodious quarters in San José, being at that time under the charge of Prof. W. T. Lucky, since deceased.

In the year 1873 Prof. C. H. Allen was elected to the principalship. This was the beginning of a new era of usefulness and success. The school grew steadily in numbers and popularity. Prof. Allen's remarkable professional ability is too well-known to need any elaborate description.

The Normal School suffered a heavy blow at the acme of its success and usefulness. It was destroyed by fire the morning of February 10th, 1880. A portion of the library was saved, but almost all the contents of its museum and laboratories were burned.

However, the school stopped for but one day. The San José Board of Education opened the doors of the city high-school

building, and this, with some additional temporary quarters, made possible the continuance of the usual programme of work.

An insurance of \$50,000 and an appropriation of \$100,000 by the Legislature enabled the board of trustees speedily to erect a house better planned, larger, and in all respects more commodious than the one destroyed. The closing month of the year's work and the commencement exercises of the current year were celebrated in the new building. Senator Baker delivered the principal address at the dedication May 2nd. Gov. Perkins, Supt. Campbell, and other distinguished guests assisted at the commencement exercises.

During the past academic year 489 pupils have been enrolled in the normal classes. The average enrollment for the year has been 367.

The Normal School is known over the whole extent of the Pacific Coast. Over six hundred of its graduates, and thousands of undergraduates, are working in every State and Territory on this side of the Rocky Mountains. It is one of the few American normal schools which have adhered steadily to the professional basis of work, instead of turning aside into the general fields of academic culture.

The coming term opens August 9th. The equipment of the school for its work is equal to that of any institution of its class in America.

NEWS RECORD.

OUR record extends from MAY 30th, to JUNE 30th inclusive.

Foreign and Domestic.

A steamboat disaster, attended with great loss of life, occurred at London, Ont., on the 24th instant, the occasion being an excursion in celebration of the Queen's birthday. The Victoria, a steamer plying on the River Thames, capsized, when overcrowded, and nearly two hundred and fifty passengers lost their lives.

Count de Lesseps proposes to give Greece a ship canal through the Isthmus of Corinth, connecting the Gulf of Corinth with the Ægean Sea.

An American horse, Iroquois, won the Derby a few days ago, and now it seems that Foxhall, another American horse, has carried off the grand prize, 1,000,000 francs, in the Paris races. Among those who witnessed the sport were President Grevy, ex-

Queen Isabella, Rochefort, and Marshal McMahon. Foxhall belongs to James R. Keene, formerly of San Francisco.

The star route investigation goes forward, and is causing some consternation in the Post Office Department.

The population of London is now 3,814,571.

Mount Vesuvius is again in an eruptive mood.

It is reported that the Panama Railroad has been sold to De Lesseps' Panama Canal Company on the basis of \$20,650,000. The road is only 57½ miles long, but it has been paying 20 per cent. dividends, and this, together with the importance to the De Lesseps company of controlling the railroad, justifies a great price.

Last month was marked by terribly destructive storms in various parts of the West.

The rioting in Ireland is assuming almost the proportions of civil war. The mob have torn up the rails on one of the railroads and destroyed telegraphic communication in order to prevent movements of the troops. Collisions between the military and the mob are of almost daily occurrence, and in several instances have been accompanied with very serious results.

It is rumored that Russian emissaries are instigating the Poles in Galicia against the Jews. The Austrian government is on the alert to detect them.

The subscription at Vienna for the relief of the persecuted Russian Jews has reached \$2,000 florins.

The public debt melted away to the extent of \$11,150,721 last month. That was a genuine spring thaw, which we hope will be kept up all summer.

Personal.

General Lew Wallace, the new United States minister to Turkey, in company with his wife, sails for Constantinople this week. It is said that President Garfield, in signing General Wallace's commission, wrote across the face of it: "Ben Hur—J. A. G."

At the coronation of the King of Roumania a crown of steel was used wrought out of a cannon captured at Plevna. The Queen's crown was of gold, and the royal pair drove to the ceremony in a carriage representing a basket of flowers.

New York loses two of her prominent educators in the deaths of Hon. Samuel S. Randall and Prof. Alexander J. Schem. Mr. Randall may be properly called the

father of the present school system of New York. Entering the office of Public Instruction in a subordinate position prior to 1841, he worked in the interests of the schools of the State till 1870, when failing health compelled him to retire. He held the office of Superintendent of Schools of New York city from 1854 till 1870, when he was succeeded by Hon. Henry Kiddle. His published works and reports attest the warm interest and large ability he devoted to the cause. Prof. Schem's principal work, in connection with that of assistant-superintendent of the New York schools, was the publication of *The Cyclopedia of Education*, as an associate editor with Dr. Kiddle.

The administration of Supt. George Howland, in Chicago, is highly popular on all sides.

General Notes.

The leading members of the English Parliament are nearly all landed proprietors to a considerable extent; and, as a natural consequence, take a personal interest in all legislation relating to the tenure of land. Mr. Gladstone is the proprietor of 7000 acres; the Marquis of Hartington is heir to 200,000; Earl Spencer owns 27,000; Earl Kimberly, 11,000; Lord Northbrook, 10,000; Mr. Dodson, 30,000; and Lord Huntley, 90,000. Mr. Bright is the only prominent member of the Cabinet who is not possessed of large landed properties.

The total amount of gold in existence has been computed at about eight billions or eight thousand millions of dollars. Melted down and massed, it would make a block sixty feet long, thirty feet wide, and a trifle more than twelve and one-quarter feet high. Coined into five-dollar gold pieces, and served out amongst all of the human family, there would be only about enough to go around.

LIQUID WOOD.—We are informed, says the *North-western Lumberman*, that sawdust can be converted into "liquid wood," and afterward into a flexible and almost indestructible mass, which, when incorporated with animal matter, rolled and dried, can be used for the most delicate impressions, as well as for the formation of solid and durable articles. To accomplish this, the method pursued is to immerse the dust of any kind of wood in diluted sulphuric acid, sufficiently strong to affect the fibers, for some days, the finer parts being passed through a sieve, well stirred, and allowed to settle. The liquid is drained from the sediment, and the latter mixed with a proportionate quantity of animal matter, similar to that used for glue; the mass is then rolled, packed in molds, and allowed to dry.

Lord Beaconsfield willed Hughenden Manor and all his other property to his nephew, Coningsby Ralph Disraeli. The estate is strictly entailed in the male line, with reversion to the female heirs, provided all the successors of the latter take the name of Disraeli, not in conjunction with, but instead of, their own surname. All his letters, papers, manuscripts, etc., are left in the custody of Lord Rowton, with full discretion regarding their publication, except private correspondence, the use of which is to be governed by the wishes of the parties interested. There is a special direction, that no part of his correspondence with the Queen should be published without her consent or that of her successors. The monument to be erected in Westminster Abbey is to cost about twenty-five thousand dollars.

The archaeological explorer, Maspero, has opened two more of the Sakhara pyramids in Egypt, and discoveries make are said to surpass in importance anything of an archaeological character since the finding of the Rosetta stone in 1799. Certain of the inscriptions explain the religious tenets of the founders, and the significance of many of the mystic rites and symbols found on Egyptian monuments. Among other things, these inscriptions completely abolish the

masonic theory in regard to these rights and symbols, and overthrow very many theories of Egyptologists.

The weight of the human brain, according to a recently published work by the eminent Munich anatomist, Prof. Bischoff, is on an average 1362 grammes to a man and 1219 grammes for a woman. The difference between the average brain-weight of man and woman thus amounts to 143 grains or 10.05 per cent. The brain-weight of man exceeds that of all animals except the elephant (4,500 grains) and the larger cetaceæ (2,500 grains). The brain-weight of the largest ape is hardly a third of man's. Prof. Bischoff has worked with a considerable amount of material; his data comprise the weights of brain of 550 men and 347 women.—*Nature*.

In connection with the planetary conjunction this year, the moment of supreme interest was on June 19th at 8:45 o'clock A. M., Washington mean time, when Neptune, Saturn, Jupiter, Mars, Venus, Mercury, and the moon were joined in the most direct line of attraction, and exerted their strongest possible united potency. Then, if at all, should have appeared the marvelous perturbations apprehended by the astrologers and other birds of evil omen.

EXAMINATION QUESTIONS.

[Used at Oakland, June, 1881, by Alameda County Board of Education, at Examination for Teachers' Certificates.]

ARITHMETIC.

1. A man sold cloth at 40 cents a yard, gaining 30 per cent.; he sold another kind at 10 per cent. less, gaining on it 20 per cent.; what per cent. would he have made on the latter if he had sold it at the selling price of the former?

2. Des Moines is 93 deg. 37 min. 16 sec. west longitude, and St. Petersburg is 30 deg. 19 min. east longitude: when it is 1 P. M. at Des Moines, what is the time at St. Petersburg?

3. A real estate agent sold for a railroad company 25 sections of land at the rate of \$5.50 per acre, on a commission of $2\frac{1}{4}$ per cent., and took his pay in railroad stock at 44 per cent. of par value. If the stock is paying a quarterly dividend of 1 per cent., what is the agent's yearly income on the stock obtained?

4. Smith and Jones trade in partnership

for two years, and gain \$192; during the first year Smith owned $\frac{2}{5}$ of the stock, and during the second year Jones owned $\frac{3}{4}$ of the stock; what is each man's share of the gain?

5. A square field contains 90 acres; if divided into 9 equal square lots, how many rods of fencing would be required to inclose all the lots?

6. What is the cost of the requisite amount of lumber to make 480 cubical boxes, inside dimensions being 4 feet each way; boards used being $1\frac{1}{2}$ inches in thickness, 200 board feet allowance for waste; lumber selling at \$30 per M?

7. How long must a horse's halter be in order that, when fastened to a stake, he may graze upon just an acre?

8. A man purchased a tract of woodland containing 77 7-40 acres at \$80 per acre. It was rectangular in shape; its length being to its breadth as 7 to 4. He imme-

diately paid taxes on the land to the amount of \$53, and paid for fencing the piece \$1.50 per rod. After keeping the land a year, he sold it at \$120 per acre, on six months' time, money being worth 10 per cent. per annum. Did he gain or lose by the bargain, and how much?

9. What is the longest measure that will accurately measure three pieces of cloth which are 27 ft., 63 ft., and 108 ft. long; and what is the shortest length each of these pieces will accurately measure?

10. An aqueduct, whose slanting sides measure 6 ft., is 8 ft. wide at the top, and 4 ft. at the bottom; if filled with water moving at the rate of $1\frac{1}{2}$ ft. per second, how many gallons of water will it discharge in a minute?

GRAMMAR.

1. Give three examples of irregular plurals.

Give three examples of possessives formed without the apostrophe and s.

Give two examples of compound personal pronouns. Show how they are formed.

Two examples of collective nouns.

2. Define case; gender.

Give three nouns of masculine gender, and corresponding feminine forms.

Define pronominal adjective; give two examples.

3. What is conjugation?

Give synopsis of verb *sit* in second person singular, active.

4. What parts of speech are used as interjections?

When does a word become an interjection?

What is the syntax of an interjection?

Define personal pronoun; relative pronoun. Decline one of each.

5. Give the different uses of what; illustrate.

Give the different uses of but; illustrate.

6. He came *out from under the barn*.

He *went forth conquering and to conquer*. (Parse the underlined words.)

7. Analyze the following: How much food have you? We have food enough to keep us alive six months.

8. He *was restrained from committing suicide* by the *comforting* words of the stranger. (Analyze; parse underlined words.)

9. "Guy Denzil! is it thou?" he said;

"Do we two meet in Scargill shade? Stand back a space! thy purpose show,

Whether thou comest as friend or foe."

(Analyze. 20 credits.)

GEOGRAPHY.

1. Define water-shed, delta, glacier, typhoon, monsoon.

2. Name chief exports of Mexico and Central America, of India, France, Spain, Switzerland.

3. Name three principal cities of North America, and two of South America, stating causes of location and growth in each case.

4. What lines separate the different zones? Why were these lines fixed where they are? What places have no latitude? What are isothermal lines?

5. What are the following, and for what noted? Ganges, Himalaya, Gibraltar, Suez, Nile, Sheffield, Hatteras, Fall River, Jerusalem, Mauna Loa.

6. What form of government has Russia, Switzerland, Egypt, Germany, Chili?

7. Name the provinces of Canada, chief cities, largest rivers.

8. Account for the existence of New Orleans, of Denver, Virginia City, Washington, Milwaukee.

9. Of what commercial importance is the Mississippi River and its tributaries?

10. What great triumphs of engineering and mechanic art have been constructed within the last twenty years, or are now in process of construction throughout the world?

What great scheme is now being considered for improving the world's commerce?

HISTORY OF THE UNITED STATES.

1. Mention the most important English discoveries made in North America; the most important French discoveries; the most important Spanish discoveries.

2. Give the chief causes of the Revolutionary War; the War of Secession.

3. How many French and Indian Wars were there? Name some of the principal events of the last.

4. What is the "Monroe Doctrine"? What was the "Nullification Act" of 1832? Who was President at that time?

5. Name the most noted American inventors, scientists, and authors, and state their most important inventions and works.

CONSTITUTION UNITED STATES AND CALIFORNIA.

1. What is a Bill of Attainder? What is an *ex post facto* law? What does the Constitution of the United States say concerning these?

2. State the characteristic points of similarity of, and difference between the State Legislature and Congress.

3. How may the Constitution of the United States be amended?

4. Under what circumstances may an extra session of the Legislature be called, and on what subjects has it power to legislate?

5. What are the necessary conditions in order to be eligible to the Presidency? to a

United States Senatorship? to the House of Representatives?

SPELLING.

- | | |
|-------------------|--------------------|
| 1. Attorneys. | 26. Rhubarb. |
| 2. Mimicking. | 27. Vicissitude. |
| 3. Benefiting. | 28. Querulous. |
| 4. Piazza. | 29. Subtle. |
| 5. Vermilion. | 30. Rarefy. |
| 6. Jeopardize. | 31. Surcingle. |
| 7. Elysian. | 32. Garrulous. |
| 8. Satellite. | 33. Onyx. |
| 9. Hypocrisy. | 34. Menagerie. |
| 10. Kaleidoscope. | 35. Holiday. |
| 11. Schism. | 36. Quincunx. |
| 12. Schedule. | 37. Committee. |
| 13. Plagiarism. | 38. Assassination. |
| 14. Trafficking. | 39. Salable. |
| 15. Guttural. | 40. Agassiz. |
| 16. Bilious. | 41. Vegetable. |
| 17. Velocipede. | 42. Psychology. |
| 18. Deleble. | 43. Schenectady. |
| 19. Sobriquet. | 44. Cincinnati. |
| 20. Sphinx. | 45. Leyden. |
| 21. Silhouette. | 46. Poughkeepsie. |
| 22. Physique. | 47. Pompeii. |
| 23. Kerosene. | 48. Marquesas. |
| 24. Lignum-vitæ. | 49. Leipsic. |
| 25. Hygiene. | 50. Arequipa. |

DEFINING AND ETYMOLOGY.

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|-------------------|--------------------|
| 1. Assuage. | 21. Vivisection. |
| 2. Gossamer. | 22. Perquisite. |
| 3. Deprecate. | 23. Mural. |
| 4. Chimerical. | 24. Natal. |
| 5. Millitate. | 25. Mobility. |
| 6. Innocuous. | 26. Stiletto. |
| 7. Liliputian. | 27. Macadamize. |
| 8. Subpoena. | 28. Gubernatorial. |
| 9. Venire. | 29. Scalpel. |
| 10. Hypothecate. | 30. Vociferous. |
| 11. Curriculum. | 31. Sallow. |
| 12. Obloquy. | 32. Allay. |
| 13. Inauspicious. | 33. Fen. |
| 14. Gordian. | 34. Cozen. |
| 15. Nomadic. | 35. Ostracize. |
| 16. Ottoman. | 36. Armada. |
| 17. Virulence. | 37. Funnel. |
| 18. Imperious. | 38. Segregate. |
| 19. Prescience. | 39. Collusion. |
| 20. Continuity. | 40. Huckster. |

ETYMOLOGY AND MEANING.

- | | |
|--------------------|------------------|
| 41. Reiterate. | 46. Submission. |
| 42. Peninsula. | 47. Omnipotent. |
| 43. Jurisprudence. | 48. Superintend. |
| 44. Illiterate. | 49. Telephone. |
| 45. Manuscript. | 50. Photometer. |

LITERARY NOTES.

In the July *Harper*, among the usual excellent array, we especially note "A Neglected Corner of Europe," by Mrs. L. W. Champney; "Our Dutch Masters," by E. Mason; "The White Mountains," (beautifully illustrated) by S. A. Drake; and "A Day in Africa," by T. B. Aldrich.

Our *Little Ones*, The Russell Publishing Company, Boston, comes to us regularly every month. A better periodical, and one more adapted to cultivate a taste for the best literature among our primary children, is not published.

The July *Popular Science Monthly* contains "The Races of Mankind," by Prof. E. B. Tylor; "Production of Sound by Radiant Energy," by Alexander Graham Bell; "Physical Education," by Felix L. Oswald; "On Fruits and Seeds," by Sir John Lubbock; "The Development of Political Institutions," by Herbert Spencer; and "How to Prevent Drowning," by Henry MacCormac.

Education for July-August contains "Real Education," by William Jolly, H. M. I. of Schools, Scotland; "The Eastern Colleges for Women," by John Tetlow; "The Education of the Public with Reference to Normal Schools and their Work," by Prof. Grace C. Bibb; "The Public School System," (part ii) by George Hicks; and "The Belgian International Congress of Educators," by Wm. T. Harris, LL. D.

The July *Scribner* is a superior number. Among its contents are: "The Younger Painters of America," by W. C. Brownell; "The Sea-Horse," by Henry W. Elliott; "A Day in the Ma'sh," by M. F. Egan; "An Old Virginian," by John Esten Cooke; Cable's story, "Madame Delphine"; and Howell's "Fearful Responsibility."

There are some notable articles in the July *Atlantic*, which all teachers should read. They are: "Mischief in the Middle Ages," by Elizabeth Robins; "Which is Mythology?" by John Fiske; "The Greek Play at Harvard," by Charles Eliot Norton; "In Memory," by John G. Whittier; and "Philip's Death Cell in the Escorial," by A. A. Adel. In addition, there are two serials: "The Portrait of a Lady," by Henry James, Jr.; and "Friends," by Elizabeth Stuart Phelps.

The Supreme Court of New York has granted the order to change the name of the corporation of "Scribner & Co." to "The Century Co."—the order to take effect on the 21st of June. The July issue of *Scribner's Monthly* and *St. Nicholas* will have the new corporate imprint.

Van Antwerp, Bragg & Co. have purchased from Messrs. Ivison, Blakeman, Taylor & Co., the original publishers, an interest in the "Standard Supplementary Readers," (formerly known as "Swinton's Supplementary Readers") and will furnish them on the same terms at which they have hitherto been offered.

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MORAL INSTRUCTION IN THE COMMON SCHOOLS.—HOW BEST ACCOMPLISHED.

ARTICLE II.—HOW BEST ACCOMPLISHED.

BY EUOTE.

[Premium Essay.]

WRITING to an American friend many years ago, Macaulay, speaking of our institutions and their probable perpetuity, said that we were "all sail and no anchor." The epigram is still re-echoing through the columns of pessimistic papers. But the great English essayist was mistaken. Education is the anchor of the republic, and every little school-house in our State sends out little filaments that join to make a mighty cable, that no wind or storm can part; for in every cañon and on every mountain-side is the cradle of genius, invention, and enterprise; and there likewise is moral instruction, which is the basis of all modern civilization.

"Knowledge is power," but, unfortunately, an educated villain is more powerful than his ignorant partner in crime. Hence results the need of a fly-wheel on the machinery. To be effective, moral instruction must take into consideration the mental strength or weakness of the individual. For this reason, uniform methods cannot be relied upon, nor can uniform results be expected.

There is a "darkness in the understanding, a weakness in the will, and a tendency to evil" in the minds of some of our charges that would render nugatory any attempt at formula or general precision.

Looking upon life in general, we notice that the individual will in any given case do that which he thinks, on the whole, will give the most pleasure and the least pain, with the minimum amount of risk to himself. Accepting this premise, it is evident that, no matter how erratic the individual's actions may seem, however great the amount of trouble and mistakes that ensue, yet the sum of human delinquencies is less than if men did differently, being by nature what they are. Whittling this down to a finer point, it is evident that the present order of things is the best possible under the circumstances. Pope arrived at the same conclusion, but by a different road, when he said, "Whatever is, is right." This illustrates the difference between dogma and deduction: the former has no place in moral instruction in the common schools; the latter takes the front rank. There is moral instruction in all honest work; there is a lesson inculcating its necessity in the ultimate ending of all dishonest work. This is the first lesson to give pupils: that work is honorable; that it is indeed a form of worship; that nothing is so destructive as idleness; nothing so conducive to prosperous advancement as honest labor. With this may be inculcated high moral purpose, ennobling thoughts and aspirations, and humanizing influences from every-day experience. A pupil can be put in love with the good, the beautiful, and the true, for their own sake, by quick perception and prompt application, on the part of the teacher, of those divinely harmonizing influences which may be interwoven with the every-day affairs of school life.

Perhaps it may not be out of place to say right here, that we teachers can generally teach best that which we take the most interest in; that our interest in any subject is in direct proportion to our knowledge of the subject; and therefore it follows, that the better we understand, and the more imbued we ourselves are with the spirit we would inculcate, the more effective our teachings will be. More than this, "the faults of teachers soon become the teachers of faults." In no department of instruction is example more potent than in that of moral instruction. And hypocrisy cannot succeed. Children see through shams quicker than grown people do; and unless a teacher can cause his pupils to have confidence in him, his influence as a moral instructor is best represented by a negative quantity. Nor can he construct ladders out of honey and chopped straw. What he says and does in this matter must mean something, and must be so said and so done that it may find an affirmative echo in the minds of his pupils.

'Tis evident that moral instruction must be of a general nature, appealing directly to the percepts. The teacher should touch lightly upon the chords of emotion and sympathy; these are best vibrated by the gentle voice and hand of the mother. Call upon the judgment, the innate law of nature written on every heart—no dogmas, no imperious demand for implicit belief—brief outlines, high thoughts, lofty impulses, humanizing utterances—these are the germs of success. In the school are numerous religious sects, nearly all dif-

fering upon minor matters, yet nearly all with a common belief in God and immortality and the glorious teachings of Him who said, "I am the Resurrection and the Life."

Christ's Sermon on the Mount, his answer to the young man, are as fresh in their utterance, as sublime in their teachings, and as forcible in their effect to-day as when they fell from the lips of the great Teacher eighteen centuries ago. Causing a realization of the truth, and beauty, and reason for the observance of these precepts, is of far more importance than the casuistic discussion of their source. Let it be remembered, that the highest measure of success does not attend attempts at lecturing or formal didactic discourse. The most useful principle of moral instruction can often be imparted without direct reference to the subject itself. The true teacher can find an object-lesson in this matter in the every-day routine of school duties. There is moral instruction in the surroundings of school life, in habits of neatness, in the arranging of lessons, in the manner of conducting a recitation, in the personal appearance and habits of the teacher, in the easy, persuasive voice, in the kind consideration for the pupil—in all personal intercourse between teacher and pupil. Delicacy of conscience should be encouraged, and due deference paid to the tender feelings of childhood. The moral sensibilities are often warped by snubbing and unwise correction; and one burst of anger or exhibition of petulance may nullify the moral instruction of an entire term.

Punishment, corporal and otherwise, is very often subservient of moral instruction in the manner of its administering. Too many teachers, in the discharge of this obnoxious part of their duties, convey the idea that it is a direct personal affront that they are avenging upon the hapless juvenile; that it is their own wounded honor that requires prompt and painful reprisal; and thus the real intent of the punishment is overlooked by one, if not both, of the parties directly concerned. But this is in every sense a painful subject. In general, the less corporal punishment in the school the better; and an excessive use of the rod is *prima facie* evidence of the teacher's incapacity.

Moral instruction should not be made to occupy any isolated portion of the course of study. It should be to all the rest what the color is to the flower, and should be co-existent with every exercise from day to day. Here is the teacher's great privilege and opportunity. He can call to his aid all the vast and manifold appliances of his surroundings, and, in tongue more eloquent than living voice can utter, can thus teach a pure morality, a higher law, through the the medium of that particular means in hand at the passing moment. Let him ever impress upon the minds of his pupils, that nobody can do anything nobler or higher in this world than to make himself as humane and as intelligent as possible; to form high ideas; to adopt right rules of conduct; to abhor deceit; to keep unsullied the pure garment of the soul, and to live at peace with himself and all with whom he is brought in contact. The teacher, in this instance, will find it a help to assume a certain amount of good intent on the part of the pupil, and stimulate it to healthy growth and profitable fruition.

To achieve the fullest measure of success, it will be necessary to appeal to the imagination. It is not wise to measure all things with the line and plum-

met of reason. The soul must be stirred, the imagination quickened and expanded, examples given of the great of all ages—of those immortals “who, though dead, yet rule our spirits from their urns.” Here is the great difference between religious teaching and moral instruction. With the former the teacher has nothing to do; and in this department of his duty everything depends upon the teacher; upon his tact, cheerfulness, and perseverance. Let him not confound piety with dyspepsia, nor fancy he is religious when it is but a disordered liver. There must be no flatulent moralizing. A successful moralizer must needs be a good word-painter, and such artists are scarce. A morbid manner, a sour face, and enunciation of divers pains and penalties at the end of the route, will be of no avail. There is no need of any weeping, or wailing, or gnashing of teeth. Everything in nature and the glorious works of God, is, to the young lives treading the green border of youth, replete with the freshest and most fascinating form of moral instruction. If, as Wordsworth beautifully says, “The meanest flower that blows can give thoughts that do often lie too deep for tears,” so, too, it may give rise to thoughts that take us above and beyond this dim earth, and all the din and cant that tend to mar our earthly peace. Whether in rock, or star, or plant, or world, we find sources of moral instruction. Earth, and sea, and air, all scenes of beauty, all sounds of joy, are conducive to its advancement. We have here the true system of object-lessons. The object system in moral instruction is as old as Christianity itself. Amid Judean hills the great Teacher used object-lessons in his moral instruction. “The Prodigal Son,” “The Good Samaritan,” “The Fig-Tree,” are among the best of his object-lessons. Here is a divine model that we, in all humility and reverence, may look upon and copy.

As yet we have no “Quincy method” of moral instruction. Perhaps in the near future we may be favored. Some men who have just come up from lower levels into the sunlight which has been shining above and beyond them for years, may cry that all the world was in darkness till their advent, and then enunciate their own awakening as a new discovery. Till then, we must grope along as best we may.

In this matter, uncommon sense is not required; average judgment is. Humility can be better taught than by stooping, hollow-chested. It will be useful to show the relation of cause and effect, and the mutual dependence of everything in nature, in which many things are invisible to the untrained eye, and yet may be made manifest to all; remembering that the will deals with results, but the moral activities are oftentimes reflex in their action, and are influenced by mental association. Music is an effective means of moral instruction, and few souls but will send back an answering thrill to its sweet concordants. It causes a better appreciation of the beautiful, and is of value.

Moral instruction must have reference to the present state, the future wants, and the probable surroundings of the individual. In youth we can stamp the coin of character with the impress and value that it will wear forever. It is not well to try to do too much. Be in no hurry, and never pull up planted seeds to see if they are sprouting. Let there be a fitness in all things. A young oaklet planted in a crystal vase will, expanding, burst the

the delicate shell; and thus may ruin be wrought, where, by observance of this fitness, strength and beauty might have been produced and preserved. Teach moderation and temperance in all things; a just and proper pride; a strength of soul; and that, though it is not possible to command success, it is noble to deserve it. All this must be from the heart, and has no set rules. The teacher should not be daunted by stupidity nor incorrigibility. If savagery cannot be conquered, it can be civilized. Of course absolute conquest is better, but sometimes unattainable. Hygienic rules and a common-sense application of their utility will be found to form a very practical mode of moral instruction. When lofty themes are brought up for illustration, when historical facts are the subject of discussion, it is not always wise to go back too far. Precedents must not be too ancient; and we may find as much moral instruction in the "Geneva Award" as in the signing of "Magna Charta."

In the presentation of the foregoing views, moral instruction has been looked upon as leading to the development of the moral being, which, with the physical and mental, forms the trinity of humanity. The subject is a general one, and cannot be treated in a specific way. The nature of the topic is necessarily suggestive. An exhaustive treatise, it is believed, would be of less value. Much therefore remains unsaid, which, though confessedly good, is eminently impracticable. What is here suggested can be utilized in every public school in California. It may seem as though in an essay of this kind some more explicit way of practical work should be given. There is as little theory as possible. Originality must suggest ways and means to suit individual cases. Rules or set forms "would be unnecessary to those who can understand them, and useless to those who cannot."

Paul says, "Prove all things." The apostle gives excellent advice; but in this go-ahead, high-pressure age of steam we cannot stop to prove "all things." We can only catch at the best which a brief glance shows us as the stream hurries by.

The loveliest hour of the long summer day is at its close, when each little star comes twinkling out from infinite azure, and answering "Here" to its name at God's eternal roll-call falls into line for the glorious procession of the night. So, at the close of life's day, may those purified embodiments of divine essence, which we call souls, appear in sparkling presence to shine through the countless cycles of eternity.

Who bravely dares must sometimes risk a fall.—*Smollett*.

THE perception of the beautiful is gradual, and not a lightening revelation. It requires not only time, but some study.—*Ruffini*.

A WORTHY Quaker thus wrote: "I expect to pass through this world but once; if, therefore, there is any kindness I can show, or any good thing I can do to any fellow-being, let me do it now. Let me not defer nor neglect it, for I shall not pass this way again."

PROFESSOR DOWNY STUDIES ENTOMOLOGY.

C. M. DRAKE.

[Scenega, Ventura Co.]

"THERE is no doubt that natural history is the great coming study," said Professor Downy. "There is a wide field for research, and one that I confess I have neglected. I have come to your apiary, Mr. Beman, to study entomology. Entomo-logy—the science of insects. True, I possess book-knowledge or I should not have a State diploma, but the practical field-knowledge I do not possess; and therefore I have come here to-day to study bees under your practical supervision."

"I shall be pleased to look through my bees with you, Professor," said Mr. Beman. "My knowledge is about all practical, and we will see how it compares with your theoretical knowledge. I study bees for dollars and cents, you know."

"By adding what I don't know to what you do know," said Professor Downy, gayly, "we will get a good sum total." So they started towards the apiary.

One hundred and sixty neat hives, arranged with mathematical precision, and all of the same size, differing only in the color of the entrance side, stood in the bee-yard. From these hives thousands of busy bees were rushing out and in, going after stores or amusement, and often coming back with their legs golden, red, yellow, or blue with pollen.

One of these thousands came up and buzzed inquiringly about Professor Downy's head.

"Will—he—sting?" asked the Professor, in a quavering voice, as he dodged his head first one way and then the other.

"She is only curious, by the noise she makes. Keep still, and don't strike at her."

But the warning come too late. When the Professor began to fight, the hum of the bee changed to an angrier tone. She emitted a peculiar smell, and darted at Professor Downy's neck.

"Oh! oh! oh!" cried the Professor, flinging his hands frantically towards the bee, and starting to run.

"She can only sting once, and probably will soon die," called out Mr. Beman. "Come into the honey-house; bees will seldom follow one into a house."

"He stung me on the neck," cried the Professor, dolefully.

"She, not he, Professor," corrected Mr. Beman. "It was a worker-bee, an imperfect female. Here is the sting!" pulling it out and showing it on his finger. "A fine chance to study the anatomy of a sting, Professor. Here is the poison bag, containing the acid that made the sting painful. Here are the two saw-like stings; you can just see the barbed teeth on either side—nine of them here." But the Professor had gained so much practical knowledge of a bee-sting that he did not care to examine it very closely.

"Thank heaven, it can do no further harm," said he, fervently.

"Can't it!" said Mr. Beman, pushing the point into the Professor's hand. The Professor jumped and looked at Mr. Beman reproachfully.

"Do you think, Mr. Beman, it will be safe for a perfect stranger to venture among so many bees? They probably know you, but me—" and he paused and looked at Mr. Beman very earnestly.

"We will put on bee-veils and then we can defy them. Science has her difficulties to overcome, you know. Now put on your gloves, and I will light my smoker," and he took some rotten wood, lit it with a match, and put it into his tin bellows smoker.

"Why do you do that?" inquired the Professor.

"To drive the bees back into the hives. Smoke is the bees' master, and a puff of smoke will make them run when nothing else will"; and he, with apparent inadvertance, puffed a little into the Professor's face. The Professor coughed, and acknowledged the power of smoke.

"I blow a little into the entrance of this hive; the bees hasten to fill themselves with honey. I take off the top of the hive, puff in a little smoke, and now we can lift out any frame we like."

"There are a great many bees in one hive," said the Professor in a quavering voice, as he peered into the boiling mass below.

"Thousands of them," was the calm reply, as Mr. Beman selected one of the frames, and, taking it out, held it up to view, half covered with the bees. "It takes over 3,000 to make a quart, and there are about a peck of bees in this hive. I gave them an Italian queen about a month ago, and you can see part of the bees are black, while others have the three yellow bands of the Italian.

"Suppose they should all come out at us at once," said the Professor, in a voice he tried in vain to steady.

"No danger. In the warm part of the day, if they have a queen, and robber bees are not around, and you are quiet in your movements, they seldom offer to sting."

"They all do sting, sometimes?"

"No, drones cannot sting. Here is one; you see he is larger than the worker; take him in your hand and look at him. Science declares him stingless, and teachers should trust science."

The Professor took the proffered bee rather unwillingly; but the bee buzzed so fiercely that he quickly let it go, fearing that there might be some drones, unexamined as yet by science, that did have stings.

"Now let me show you how a bee grows," continued Mr. Beman. "Do you see those tiny white eggs, one in the bottom of each cell? There are over a thousand, all laid to-day, I'll warrant." After the Professor had looked very attentively, he said he saw them. "Here are some a little older; they are lying down. They hatch in three days into larvæ, which you see here in all stages, from one to six days old; they look like worms, you see. Then the other bees seal them over with a porous capping of wax and pollen, (you see it looks darker than the sealed honey) and they weave their cocoons, and in twenty-one days from the egg if a worker, twenty-four if a drone, but only six-

teen if a queen, it gnaws out a perfect bee. Here are some just hatching out, little downy things," and he took one up in his hand.

"Won't it sting?" said the Professor, not offering to take the proffered bee.

"Young bees very seldom sting; it is the old ones who are cross. See, here is the queen, the mother and life of the hive! She is longer and larger than the workers, and is the only perfect female. She lives longer than the other bees, too: three or four years, or even longer."

"How long do the others live?"

"That depends on the work they do. When the honey season is brisk, they live six weeks or so, but they may live a year if—"

"I think there is a bee inside my bee-cap! Yes, there is!" and the Professor danced about and wished that one bee's life might be very brief.

"It won't sting you. It only wants to get out."

But the Professor had gone to the honey-house, pulling off his bee-cap frantically on the way, and followed by a number of excited bees. In the honey-house Mr. Beman found him flushed and excited, but unhurt.

"Come back, I want to show you a queenless hive, with a fertile worker in it. I'll fix your bee-veil so they can't get in."

Ashamed of his ignominious flight, the Professor went back with Mr. Beman to the hives.

"You see those protruding capped cells in worker combs. Also notice that here are two, three, and even seven eggs in one cell. The bees are more than half gone, and would soon perish. Fertile workers lay only drone eggs. I let the hive stay queenless too long. I saw one queen hatch, but she got lost on her wedding-trip, as they often do; and by and by one of the workers started to laying eggs, as there were no eggs nor larvæ young enough to raise another queen from. Now I will give them eggs from this hive, and leave the bees on the comb. I will shake all these bees out into the grass. Most of them will return to their old stand, but the fertile worker may get lost, or these other bees will sting her. Now they will build queen cells over these worker eggs and larvæ, and get another queen."

"Wonderful insects!" said the Professor, enthusiastically. "Never making mistakes! Never—"

"Yes, they do make mistakes," interrupted Mr. Beman. "They often build queen cells over drone eggs, fasten combs insecurely, raise too many drones for their own good, destroy or mutilate good queens, extend their brood too fast and get it chilled, store up unhealthy juice instead of honey, get into the wrong hives and get killed, eat too much at certain times, when it kills them, and do lots of other foolish capers tending toward their own destruction. The perfection of instinct is all humbug."

"There are some bees up my sleeve! Dozens of them crawling on me!" and away went the Professor to the honey house, stripping off his coat as he went, and frantically slapping first one arm and then the other.

Mr. Beman shut up the hive and came to where the Professor was ruefully gazing at a number of red places upon his wrists and arms.

"If you had kept quiet, they would have crawled out again," said Mr. Beman.

"I guess I shall defer the rest of my studies in entomology until another time," said the Professor, as he rubbed some ammonia upon the red places. "The study of living specimens is very desirable, but I guess I'll try some other insect besides the *Apis Mellifica*." And so science lost an embryo entomologist.

CONDENSED DIRECTIONS FOR TEACHING UNGRADED SCHOOLS.

BY JOHN SWETT.

[From *Methods of Teaching*.]

THE true economy of teaching an ungraded school is to make the fewest possible number of classes, and to consider both age and capacity in making your classifications.

2. If your school is a large one, do not attempt to hear daily recitations in everything, but alternate the studies of the more advanced pupils.

3. When they are not reciting, assign your classes text-book lessons, or some piece of definite work, on slates or blackboards.

4. Economize time and instruction by means of as many general exercises as possible, in which all except the youngest pupils can join; such as drill exercises in the four rules of arithmetic, mental-arithmetic examples, the spelling of common words, abstracts in composition, review questions on the leading facts of geography, etc. To do this will require tact and forethought; but when well done, it is invaluable.

5. Take an hour, weekly, for select readings, dialogues, and lessons on morals and manners. You can fire a whole school with enthusiasm for good by reading the right kind of stories.

6. Occasionally give your class a written examination. In most city schools written examinations are carried to great extremes; but in most country schools there is not enough of written work to give readiness and exactness in the written expression of thought.

7. Train your older pupils to correct and credit the papers of the younger ones, and let the oldest girls play teacher occasionally.

8. If you are a woman, give your girls occasional talks on domestic economy. Buy some sensible book on the subject, and lend it to them. A great many homes are poorly kept on account of ignorance. Huxley says, "I put instruction in the elements of household work and of domestic economy next in order to physical training." "Knowledge of domestic economy," says Kingsley, "saves income."

9. If you are a man, take some interest in the home-work of your boys. Instill into their minds the necessity of labor for every human being. Point

out to them the life-long value of being trained in boyhood to habits of regular employment in useful labor. Many a boy on a farm complains of his hard lot, when he is really being blessed by hard labor. A wise teacher can often set him right in his notions.

10. Endeavor to make your school the district center of civility, politeness, and good manners. If they learn good breeding at all, many pupils must learn it at school. There is no limit to the civilizing influence of a gentle woman or a gentlemanly man in a country school. Send out your pupils with the seal of honor and truthfulness.

11. Persuade the parents to visit your school, even if you have to do so by means of exhibitions in which their children take a part.

12. Remember that school trustees are your legal superiors in office. Argue with them, persuade and convince them if you can, but *do not contradict them*.

13. Bear in mind that, though you may have more "book-learning" than most of the men and women in a country district, there are sure to be many parents who are your superiors in sound sense, in judgment, and in a knowledge of the solid facts of human life.

14. Before you begin school, if possible, call a meeting of the "trustees," or "committee." Talk over matters with them, ask their advice, and tell them your plans. It is well to go into a new school backed by the weight of official power.

15. Whenever you have any unusual cases of discipline, consult the trustees or the parents *before* you take action.

16. The following may be taken for practical guidance in your course of instruction:

A child of average mental powers ought to be able, on leaving school at fifteen years of age—

1. To read well and spell well.
2. To write a neat and legible hand.
3. To know the main points in the geography of the world, and the leading events in our country's history.
4. To speak correct English, and to write readily a well-expressed letter of business or friendship.
5. To work accurately any plain business question involving the four rules, common and decimal fractions, and simple interest.

Aug. 1881 _____

To do wrong is to inflict the surest injury on our *own* peace. No enemy can do us equal harm with what we do ourselves, whenever and however we violate any moral or religious obligation.—*Channing*.

"I PITY those," said Goethe, "who bewail the mutability of things, and who lose themselves in speculations concerning the nothingness of the world. What are we here for if not to make the transitory lasting? And this is only possible if we can estimate both at their true value."

WHAT THE KINDERGARTNER SEES IN THE FUTURE.

BY EMMA MARWEDEL.

[Graduating Address to the Class of 1881 of the Pacific Kindergarten Normal School.]

OUR attachment to friends is never more strongly and more deeply felt than in the parting hour. Thoughts of the past and of the future, interwoven with emotions of love, hope, and grief, hang in a thousand unspoken words on our lips, to be suppressed in the farewell pressure of the hand.

A few moments more, my dear young ladies, and we stand at the same point. You will then leave your teacher and the hours of preparatory study, to follow, as I fondly trust, with hope, faith, and devotion, the educational mission as your life-work.

Let us, then, once more, in the presence of these many friends, contemplate this life-work in its relation to the future.

You may say that this is premature; that it is a problem having reference to a system, which, according to its author and founder, Frederick Froebel, requires at least three hundred years for its complete development, and whose first demonstration, looked upon as the wild freak of an old fanatic, dates only from 1849.

Yet, what has been the result of the childlike notions of that man—of that study into the philosophy of childhood which made him a child among children and a leading reformer in education? Is it the practical value derived from his gifts and occupations which has brought him into enthusiastic co-operation with the best men and women, the best thinkers, not only of his time, but also of ours? Is it, as you have kindly consented to show to-night, the charm, instruction, and perfection, connected with the plays of childhood which have attracted the world, and which have made him understood and appreciated on the throne and in the humblest cabin?

It is his appeal for justice to childhood. It is his unsealing of child-nature; his demonstration of its relation to eternal laws; its rights and claims on parents and society.

Froebel firmly maintained:

(a) That the development of man stands under the same organic law as is found in nature.

(b) That the development of the man in the child, as in the realms of animal and vegetable life, depends on a gradual formation, according to an inward law.

(c) That this gradual formation demonstrates a development from within to without.

(d) That this development from within—that is, from the germ in man—is part of the symmetry of the whole, and is inseparable from his intellectual, moral, and physical growth.

(e) That perfection in man, as in nature, depends on undisturbed growth, and a harmony between the inner and outer life, or between the spiritual and material worlds.

Therefore, the study of the organic laws in nature, and the study of the special laws in man, form the true basis of human development, called *education*.

All education is false and destructive to the man in the child, which does not start with a gradual development from within to without, bringing the inner and outer lives, or the spiritual and material worlds, into perfect concord and harmony.

As perfection depends on the natural development of man, as of nature, beginning early in life, and even before life, so education must begin at the earliest period possible—that is, with life itself.

With this philosophy Froebel opened the broadest platform for a Christian humanitarian education, having its principles in harmony with modern science.

But whom did he call to share this platform? Was it the temporary philosopher? Was it the abstract thinker? Was it the learned man or woman of his time? These are they whose approval he sought, and he also kindled life on life in the minds of the most enlightened of his time; but it was the *woman*, the MOTHER, the mother with her baby in her arms, whom he sought as his natural assistant. He knew it was the truth of God and Nature which he preached to the hearts of the mothers, and which the mother-nature, in its intense love for her child, would most strongly reciprocate. It was the paradise of childhood, of which he whispered golden words, and which found a response in the hopes and dreams of mother-love and mother-care.

In the shadow which had fallen on human deformities from the time of the stiff, stony, and sharp-cornered pyramids; of the sensuously developed beauties of body and mind in ancient Greece; of the painful mixture of selfishness and heroism in imperial Rome; and even in the still longer and deeper shadows hanging over the imprisoned minds of men and women in the Middle Ages, with their obedience without intelligence and without self-respect; in the dim gleams of light in early Protestantism—he saw the mothers silently and patiently striving to free the race—the man in the child.

What were the powers of fanaticism, of state, or of caste, with their iron handcuffs, to hold in bondage the free-born man in child, against the creative powers of motherhood, her powers of love and faith? Therefore to the mothers he appealed for recognition of his principles of freedom, of individuality, of happiness, and of nature and her laws in childhood.

The enthusiasm aroused by Rousseau's "Emile," and to which Basedow and Pestalozzi gave practical elucidation, and over which Jean Paul threw the glowing tints and poetical flashes of his genius as a philosophical seer into the depths of human nature, Froebel, with divine inspiration, condensed into the scientific truth that "knowledge and method are the foundation for the structure of a new and better society in which duty and law keep a balance."

The purification and perfection of man, then, can and will only be attained

in and through the child's earliest awakening, earliest impressions, earliest directions, earliest activities, earliest habits, earliest pleasures, earliest love.

And herein, my dear young friends, is the relation of the Kindergarten to the future. Scarcely more than thirty years have elapsed since Froebel announced his principles; and how has the religious mission entrusted to mother-love and power been extended and developed? Lifted from the one-sidedness of woman's work, it now knows neither sex, nor creed, nor nationality; its charter, "the progress of humanity," claims "one in all, and all in one." In Europe, the Kindergarten stands nearest to the Christian church, and like the church, it is built everywhere. There it is the pride of communities, and is established with the encouragement and at the request of the government. The Kindergartners are expected to be of the highest order of mind, to possess extensive culture, cheerful dispositions, unblemished character, so that they may fill their superior and responsible positions with honor and respect.

The value of the Froebel system is above all question, and it stands recognized as the needed and only true educational development in the pedagogics of our time by the leading educators. Contributions are increasing in number and amount, with the growing conviction that the earliest education is the most important of all, and needful for the rich as for the poor, for the prince as for the peasant.

Though seemingly out of place, I cannot fail to illustrate by two little incidents the truth of what has been said.

When the Crown Prince of Prussia, with his true motherly wife, felt the growing danger for his oldest son "to be a prince," they held it best to place him under the care of a very competent kindergartner. Here, far from being with children of his rank, he shared the limited comforts of a mere citizen (Bürger) kindergarten.

Hours upon hours were spent there by the conscientious parents—studying the good effects the system had on the character of their boy; consulting with his superior leader, the kindergartner, how to overcome the many injuries which *circumstances, not nature*, had brought on their darling.

Not less speaking is the following:

The sister of the crown princess, princess Alice of Hessen, had also a little boy whom she was very anxious to give the benefit of a kindergarten. The most superior kindergartner was engaged to a public kindergarten.

A lady of the court was sent for information—it was found that the child could be admitted, *though it was* a prince, if he, as the lady demanded, would share all common rules.

Days passed, and the lady returned, saying, that the benefit was too great to give space to such small considerations. "But," replied the kindergartner, "her highness forgets that I call all children 'Thou,' and that all children call me 'Auntie.'" Again a day passed, when under the bright morning sun the gate was opened, and a new, sweet, little, hesitating voice called from behind a lovely bunch of roses, "Auntie, I hope you will not reject me from your kindergarten, because I'm a little prince."

It was announced in one of our newspapers a few days ago, that Count

Camonda, of Paris, a wealthy Hebrew, had promised a yearly contribution of 2000 francs to a kindergarten and normal class, established through the efforts of a noble and wealthy German-English lady, Mrs. Julie Salis Schwabe in Naples, Italy.

England is blessed with several eminent kindergartners, and has a most excellent organization of the Froebel system in connection with the College of Preceptors in London; Prof. Joseph Payne being its head-master. The great success of Froebel's system in the kindergartens has led to the introduction of so-called school-gardens with work-shops. Austria and Prussia having made both kindergartens and school-gardens compulsory, now count them by thousands; and Sweden alone has over two thousand school-gardens. According to a modern educational principle, that the child, primarily by his doing, and subsequently by his knowing, seeks instruction from the practical cultivation of a botanical school-garden (necessary to every good kindergarten), and such manual skill as is needed for the harmonious development of each man and woman is given in and through these school-gardens and workshops. The appreciation of them is growing daily, and they are becoming one of the chief elements in modern education, embodied in the idea of the combination of physical and intellectual culture. Now what is the aspect of the American kindergarten, and what does the Kindergartner see in the future?

The first Kindergarten Normal School on this continent was established by Mrs. F. M. Kriege in Boston, in 1870, who, with her accomplished daughter, may be regarded as the pioneer in this work, which is continually bringing forth such a rich harvest. But what a thousand women ordinarily accomplish in the apostolic spirit, may be represented as having been effected by the efforts of two women: one in Europe, the other in America. The one, Bertha, Baroness von Bulow—said to possess the strongest mind in the frailest body in Germany, with rare self-denial and untiring efforts, combined with high inspiration and cultivated intellect—personally introduced the kindergarten, through five different languages, into France, England, Italy, Hungary and Germany; the other, Miss Elizabeth P. Peabody, with the same self-sacrificing labor, untiring zeal, earnest enthusiasm, and rich culture, has made her name a household word, and herself dear to the hearts of the American people, by her efforts in the same direction. Both have raised kindergarten literature to a scientific standard. Without their efforts, without their strong insight into Froebel's system, without the magic power of the pen wielded by their hands, and the high confidence in and respect for their intelligence and character, neither Europe nor America would stand where now they stand.

St. Louis, the central place of highly approved and well established kindergartens, has over sixty. Boston stands forth with fourteen free kindergartens, on which Mrs. Shaw, the daughter of the great Agassiz, spends annually \$40,000. Boston also possesses numberless private kindergartens, and several kindergarten normal schools all in good working order. Michigan, Pennsylvania, Maryland, Ohio, and Illinois have kindergartens connected with the State Normal Schools, and in many places church and charity kindergartens crown the steadily growing efforts of the enthusiastic advocates of kindergarten instruction.

And now, what are we doing here in California? What lies in our future? We are, as yet, at the beginning of our effort. It was only in the autumn of 1876 that the first steps were taken toward the establishment of kindergartens in California. My first year in California included Miss Kate Smith as a pupil. Her superior work in the free kindergarten, combined with the inspiring activity of Mrs. Sarah B. Cooper, with her clear and beautiful sermons on childhood, and the co-operation of a number of earnest, high-minded kindergartners, have gained for the work the respectful sympathy and encouragement of the community, and have placed California, and San Francisco especially, in the foremost rank of free kindergartens. And we enjoy it in the name of happy childhood, and the progress of humanity. And Miss Peabody, whose opinion is a criterion, says: "If California continues to be permeated thoroughly by the new education, she will be the leading State in the Union, while her success will reflect back on the older States."

Can we conscientiously accept such faith in our future? Can we, from the past, obtain the justification for such confidence in a work which is destined to become national? We can, with the co-operation of mothers, fathers, boards of education, and perhaps, more than all, of those who stand forth as the exponents of moral and religious development, viz: the clergy.

Is it too much to say that we feel that we have this co-operation? Has it not been expressed by word and deed in many, many ways? Have we not already one public kindergarten, under the supervision of Miss Flora Vandenburg, whose unsurpassed devotion to duty, whose genial and loving disposition and earnest labor, have laid the corner-stone, as we hope, for the establishment of free kindergartens as a branch of the public-school system in our city?

Let us then hope, let us keep strength in faith!

Is not California justified in being considered the leading State in the new education? Are not her climate, her soil, her vegetation, advantages of incalculable value?

Let us then briefly consider what the kindergartner sees in the future of California.

She sees, as she trusts, public kindergartens wherever the light feet of our darlings may trip to them, with large, airy, sunny buildings, surrounded by gardens, beautiful as the paradise of childhood. She sees, as she trusts, school-gardens in every ward, in every village, with aquariums, cabinets, appliances for silk-culture, and gymnasiums. Workshops, also, where the hand as well as the head may be educated for their sacred service to the world and to themselves.

She sees, as she trusts, in every high school the scientific preparation for fatherhood and motherhood—that is, the science of man, in the historical, moral, and physiological relation to man, and also to the service of education. For, the art of serving one's self and mankind should be made a matter of instruction to both sexes. Herein she sees the revelation of the perfected development of mankind for which the world has yearned and labored.

May you, my friends, rejoice in this revelation, toward which you are to use your efforts. The great obligations which you assume will bring you many

serious hours. The sorrows of childhood will sadly reflect upon your own lives; but what can be too serious, what can require too much earnestness, for the guide of childhood, the mold of human beings, the sculptor of the future.

Glory and godspeed to you, then, and to all who help in this, your and our great work!

May this evening be forever remembered as an earnest prayer for the sacred rights of childhood!

INCIDENTS IN FIRST PUBLIC KINDERGARTEN.

BY MISS KATE D. SMITH.

[From the Report of the San Francisco Kindergarten Society.]

AH! those scenes—comic, tragic, and pathetic—will never exactly be repeated, for there is now a solid foundation laid, the old things have passed away, and behold! all things have become new. They have, however, beguiled many a hearty laugh, and many a tear, too, from listeners; and now, as I write this little story of the past months, people say, "Don't fail to give a budget of the children's sayings and doings, for the like of them was never heard."

And indeed that is true. Beginning with the five-year-old boy who, when asked if he'd like to play the drum for the march, went into fits of laughter, and between the paroxysms ejaculated:

"A drum? Well I should smile. What'll yer hev next? This *is* a h—l of a school!"

(Pardon this profanity—it is feeble beside the remarks we hear every day.)

Such curious ideas have these little waifs of anything concerning God and Heaven! "I wouldn't be afeard to say 'Merry Christmas' to God—He ain't cross," said little Mary Mulligan, when we were talking about our Christmas-tree. And on wearing an unusually pretty dress to school one morning, I was met with the artless observation: "I guess God would like to see you in that dress, wouldn't He?"

Then hear this colloquy between two little boys engaged in drawing:

Jack.—"You're chewing gum again, Joe Bragg."

Joe.—"Well, Miss Kate ain't lookin'."

Jack.—"Well, God'll see yer, sure enough—yer know that, Joe Bragg?"

Joe.—"Oh, God can't tell."

Jack.—"Yer needn't be so sure! *Yer bet yer life He'll stand by Miss Kate every time.*"

Or again: "Is a grasshopper a worm?" asked little Hattie.

"No," I replied, "it's an insect; insects have wings."

"Oh, *angels is insects* then, isn't they?" returned this infant philosopher.

If I should write the half of what has come before my eyes in these three years, you would hardly believe it the truth, for the charity Kindergartner does not lose sight of the child at her school-room door. She knows his home, the pre-natal and post-natal influences which have made him what he is; she knows the mother and father, the amount of rent they pay, and whether they have money to pay it. She is the confidant of many a weary, heart-broken, discouraged—aye, and abused woman. But many of these confidences are too sacred to repeat. I could tell of a deserted wife who reclaimed a miserable husband through her little son. She began, at my suggestion, sending pieces of Jack's work to his father, who was in the mines, and from whom she had received no letters or money for two years and a half. We received no answer, and made a second trial. Jack and I labored over a beautiful invention in drawing with colored pencils. (Jack was a baby, four and a half years old, by the way.) Then we made two gold and scarlet weaving mats into a shaving-case, and last of all, printed this note, with infinite care and trouble:

"I love my papa. I wish he'd come to see Jack."

Bravo! Victory!! An answer from papa, inclosing \$20, asking if that was really Jack's work, and wasn't he an awful smart boy, and if he looked like him. After renewed attentions from our side, Jack's papa came down from the mines, found his wife more agreeable than he had imagined, and his boy a perfect marvel. The final consequence was, that Jack's papa stayed at home, and has supported his family ever since.

One mother told me that her husband, being out of work the whole winter, became so depressed he was ready to throw himself off the dock a dozen times; but after walking the streets till dark he would come home, and Mary and Jimmy would be sitting up in the trundle-bed, singing the Kindergarten songs. (These parents, with five children, lived in two rooms, one of which was half under water in the rainy season.)

"And that man, Miss," the mother said, "would amuse himself with them children for an hour, and laugh at their cunning ways when they told him all they had done the day through, and say they were the brightest of the lot; and by the time they fell asleep, he'd chirp up and say he must try again to get work; them children was too cute to starve."

One poor family moved quite out of town into a shanty on the hillside—the mother sick, and a large family almost destitute. They were not to be found at the old house; but the moment the mother was able to leave her sick-bed, she *walked* to town (three miles), carrying her baby, and leading the two children, three to five years old, to see me.

"They've cried every blessed night these three months," she said, "for a sight of you; and yesterday my husband said if I couldn't stand the walk, he'd knock off work a day, and take 'em to see you himself."

These are but two cases out of hundreds, if there were only space to relate them; and the other Kindergarteners have the same experiences. All the babies in our several districts are named for us, and we stand committees to take charge of at least twelve small children apiece, in case of the death of the parents.

Ah! if half the benedictions, "the love of the saints," and the blessings of Heaven that are showered on the charity Kindergartner could be hers, she would indeed be fortunate among women.

Many of the mothers, as I say, are very grateful, others, of course, are not so; but these are decidedly in the minority. There are seventy to eighty children on the roll, and we assist in clothing about thirty or forty of them. By degrees this assistance, in most cases, is needed less and less, for the mother, after a little, takes a new interest in her children, and in the Kindergarten, and keeps them cleaner and better clothed.

READING IN THE PUBLIC SCHOOLS.

M. J. A.

[PHILADELPHIA, April 21st, 1881.]

I THINK I am speaking the mind of every conscientious, experienced teacher when I say, that reading in our public schools is, in point of excellence, far below what it should be. The results do not justify the time and energy given to it.

Reading, as all know, is simply talking in the language of another; that is, in the language of the author. I wonder how many authors would feel complimented by the general rendering of their productions? Echo answers, "I wonder!"

"I fear we should not all be as fortunate as was the little girl in New York City, who at an evening's entertainment rendered one of Whittier's little poems in a manner so satisfactory to the author, who chanced to be present, as to call from him a personal congratulation. The girl was but eleven or twelve years of age, and yet Mr. Whittier said she brought out ideas in the poem that he himself had not discovered.

Let me ask you, county and city superintendents, in your "official rounds," what percentage of pupils do you find reading selections as they would talk them were the language their own? You would hesitate to answer, I know; and if you did, would take Colonel Ingersoll's advice, and "speak low." There certainly is just ground for humiliation.

It is not at your door, however, that the blame is to be laid, nor, indeed, at any *one* door in particular, but at the general door of the school department. Those of us who have given special attention to the subject are convinced that there exists a very general misconception of what true reading is, and a still more general one as to the means best suited to develop good readers. Indeed, as to "best methods," there exists a great variety of opinions, even among our ablest reading specialists; and no one in this liberal age would be so dogmatic as to advance his theory, however good, as the only true one. In the study of this art, as in the study of any art or science, it would be well to con-

sult different authorities and see what the general trend is; for we have all lived long enough to know that all wisdom is not concentrated in one book, or one person, or one theory. Should we begin such an investigation, how apparent would become the need of deeper research, and how rightly would we conclude that reading, too, like painting and sculpturing, is a long, long art.

But for the sake of practical ideas, let us visit some average school-rooms and see what lessons they have for us.

1st. We very commonly find pupils reading in books, the language of which they cannot comprehend; how then can they read it? The notion that pupils have, that the use of a more advanced book must necessarily make them better readers, is a very absurd one.

2nd. We usually find them reading with sole reference to rapid pronunciation of words, and the mechanical construction of sentences, regardless of ideas or the impression to be conveyed. What could be more fatal to good reading! When will pupils be made to understand that punctuation-marks are merely to assist the reader to the true meaning—a guide-board, indeed—and have in reality nothing to do with reading itself?

How cruel to hem pupils in by punctuation environments that take away a very life of reading! I hope children have been told for the last time “to always let their voices fall at a period.” This one rule, if adhered to, would in itself spoil any reading. It is this teaching that makes those mechanical cadences so common, so disagreeable, and so far removed from natural speech.

The infallibility of this rule has often been doubted. Occasionally a pupil has had the courage to ask, “Always?” when the teacher has hesitatingly responded, “Most always.” But, fellow-teachers, the next time you have the question to answer, say emphatically, “No.” Where do we get our models for reading but from nature, from every-day conversations? and where is the talker that drops his voice at the end of every sentence? One stops, ’tis true, but the voice does not necessarily fall. It may rise or be held in suspense.

3rd. In addition to the errors mentioned we frequently see faulty positions, either a careless, indifferent sitting posture, in which it is impossible to read well, or else a rigidly careful standing one, equally fatal to natural expression. Pupils are apt to confound an erect position with a constrained one. They should not *get* ready to read, but should be ready; that is to say, they should be habituated to the best reading position, so that an extra effort would never be necessary; otherwise, they unconsciously imbibe the idea that a special adjustment of trunk, arm, head, and book is an indispensable ceremony. Teachers should attach importance to this matter, then would good sitting and standing become a matter of as much pride with pupils as are perfect lessons and high percentages.

Lastly, we come to the matter of voice and its abuse. Harsh, discordant tones are the prevailing ones of the school-room. Some are even painful to listen to. Why is this? Most children enter school with soft flexible voices. Why, with use, do they become just the opposite? Manifestly from improper use. From too high and too loud reading, and from the almost universal

practice of concert-reading, an exercise that cannot be too strongly condemned. It spoils the ear, makes mechanical readers, and ruins the weaker voices, by the almost unconscious effort they make to vie with the stronger ones. Children should read separately, and with the natural conversational voice as a basis, with rate, pitch, and force adapted to the sentiment. Upon these things should the criticism be given, rather than upon the petty mistakes; for as the more important things are being mastered, these trifling errors will naturally be outgrown.

Proper criticism leads daily to a higher appreciation of the art, and children become enthusiastic under it; but as usually given, it is comparatively worthless. Very little children can reflect joy, sorrow, anger, love, and all the other passions to a degree, and should be early led to do so. Indeed, until they can at least suggest them, they cannot, in the truest sense, be said to read; and will ever be subject to the criticism—recently passed upon a platform reader—"of tonguing words, not thoughts."

But teachers will say, We have had enough of iconoclastic writings; give us something in place of the broken images—a very proper suggestion. And just here let me say, my heart ever sympathetically turns toward that body of earnest souls—the teachers. None realize their trials better than the author, who, by unyielding enthusiasm in the profession, nearly sacrificed her life. Gladly would she aid by a timely suggestion. The remedy for the evils here portrayed, however, lies beyond the pen. It lies in the well-chosen "precept upon precept" of the teacher, carried out in work upon work by the pupil, and not in the "line upon line" of the essayist.

The only true remedy, as I believe, is in putting into every school a thoroughly trained teacher of reading, one painstaking and of adaptability, whose sacred duty it shall be to never give *one line* to a pupil to which she, herself, has not devoted much study. This may at first seem ludicrously exacting; but when renowned readers, who, after more than forty years of faithful study, will not read the simplest little poem at sight lest they do injustice to the act, I conclude it is quite time for us all to attach much more importance to it.

A celebrated Philadelphia divine stood before his Sabbath-school pupils the other Sunday to make a short address. He did not take the pulpit as was his custom, remarking, "That is a place I never enter unless I am prepared to the best of my ability." Such should be the spirit and practice of the teacher of this finest of arts. Success will crown such endeavors, and only such. Is the millennium, then, so far off? I trust not. Let the subject be agitated until the superintendents and trustees see the necessity for action, as the teachers already do. Let there be a general cry for help, a general uprising for the cause, and reformation *must* follow.

Let us not be trammelled in our onward movements by any false idea of consistency; but let us, rather, unflinchingly attack error. If she be wounded "let her writhe in pain, and die among the worshipers," while we, in the spirit of true progress,

"Ring out the old, ring in the new,
Ring out the false, ring in the true."

A MAN must become wise at his own expense.—*Montaigne.*

LEARNING was given to promote good actions, not empty disputes.—
Inscription on a Mohammedan mosque.

MAN has still more desire for beauty than knowledge of it, hence the caprices of the world.—*H. Doucan.*

SOME wild statements involving wonderfully divergent estimates have been made about the light-giving power of the different lights. A standard sperm candle, although it may be a good unit to measure gas by, is a very poor standard for the electric light. None of the various modes of measurement in use seem to apply exactly to this light, and the standard of measurement of the future has yet to be found. Much is said about the subdivision of the electric light by certain gentlemen, who hope to distribute it throughout our houses from one central spot, and furnish it cheaply and abundantly in our cities. I am one of those who do not believe in the impossible; but I say that, with our present knowledge, this problem is unsolvable. Sir William Armstrong can only keep thirty-seven lamps going; Lane Fox could only show twelve lights; Professor Adams could only produce from the most powerful dynamo-electric machine, by calculation, one hundred and forty lamps. Where is the subdivision? The advocates of subdivision assume an inexhaustible source of electricity. Their opponents reply that there is only a very limited source of energy in every dynamo-electric machine. It may be that more powerful machines and lamps of lower resistance may enable us to light up a greater number on one circuit, but this is not subdivision, it is multiplication.—*W. H. Preece, in Popular Science Monthly for July.*

EDITORIAL DEPARTMENT.

DR. R. H. McDONALD'S BENEFACTION.

DR. R. H. McDONALD, President of the Pacific Bank, has placed at the disposal of the Woman's Christian Temperance Union the sum of one thousand dollars. Eight hundred dollars will be distributed among the public schools of San Francisco for prizes awarded for the best essays on the evil effects of intemperance and tobacco. The remaining two hundred dollars will be awarded to the high schools of the State, as State prizes, as follows: The first prize \$100, the second \$50, the third and fourth \$25 each.

The High School prizes in each school of this city are, for each Senior Department \$10, and for each Middle Department and each Junior Department \$8. In the Grammar Schools in each school the prizes open to the scholars of the First and Second Grades are \$8, open to those of the Third and Fourth Grades \$5, and the Fifth and Sixth Grades \$4. The prizes for the Seventh and Eighth Grades of the Grammar and Primary Schools in each school are \$2 for each grade. After the prizes have been awarded in the different departments, a new committee will be

appointed to compare these compositions, and the R. H. McDonald \$25 Gold Medal will be awarded to the writer of the best composition, and a \$15 Gold Medal to the writer of the second best. The prizes in the Seventh and Eighth Grades will be awarded for the best speech upon the subject of "Twin Evils: Intemperance and Tobacco."

The conditions under which these prizes are to be distributed are as follows:

Teachers, parents, and friends are requested to furnish all the facts possible, and to suggest sources from which the pupils may derive information. This instruction must be given before August 29th, and may form a part of the language instruction, and the essays be credited as a part of the monthly work.

Teachers and parents are encouraged to have the pupils write the essays in full at least twice, but no more, previous to the day of final writing, and to correct them; the pupils, if desired, assisting in the work of correction. This is requested in order that the pupil may have an opportunity for properly arranging and expressing facts and ideas upon the subject, and for improving the manner of expression, through the suggestions of the teacher.

The essays must all be written under the supervision of the class teacher on August 29th. No instruction on the subject is to be given on that day, and no pupil will be permitted to have in possession any previously written essay, notes, or copy, or to receive any assistance from any source whatever. No manuscript, when handed to the teacher, shall in any way be changed or corrected, nor shall it exceed four pages of cap paper, nor contain less than one such page of written matter.

Dr. McDonald's wise and beneficent action is beyond and above praise. It is worthy of imitation everywhere, and is peculiarly timely and fitting in this cosmopolitan community. All through our schools, from the lowest to the highest classes, busy little minds are pondering on the "Twin Evils." Our libraries are overrun with eager inquirers for books, our bookstores filled with seekers for literature long deemed unsalable. In every home innocent little tongues are prattling and arguing and inquiring about these deadliest foes of human progress.

To whom else shall the child go, if not to father and mother? So, the interest of parents is elicited by the questioning of little ones; they feel, perhaps as never before, what an inheritance an example of drunkenness must be to those they love. What father can defend the use of any intoxicating beverage when the frank eyes of the dear ones ask, "Is it good?" What father can explain the poverty and crime and degradation, the mental wreck and moral ruin that wait upon and attend drinking, and still keep up the habit that contradicts his speech and makes his every-day existence a living lie? There may be such men; we hope for the sake of human nature they are but few.

It is in this indirect but far-reaching influence upon the community that Dr. McDonald's gift will be productive of its greatest good. Every fireside is reached—the heart of every parent, through the unsullied innocence of the children.

This is the kind of temperance crusade we believe in; here the hundreds expended will come back in a compound ratio.

NOTICE.

ALL letters referring to business with this JOURNAL, and all postal orders and drafts, must be addressed to H. P. Carlton & Co., Publishers and Managers.

LESSONS OF THE ATTEMPTED ASSASSINATION.

THE attempted assassination of the President has a lesson for us as teachers. In our schools not stress enough is laid on the principle that it is true merit and honesty which entitle a man to position or honor. The average American youth grows up in the faith that every man who is "smart" enough, and belongs to the dominant party, should have some political office. He believes (or perhaps sees) that a political office is a place where a minimum of work can be given out for a maximum of pay.

He should be taught that all this is wrong. School is the place for him to learn that in serving the government he serves merely himself and his neighbors; that dishonesty in public position is doubly wrong, inasmuch as he commits a theft and violates the compact which unite men in a social state; that the man entitled to public place, like the one entitled to private position, is he who is best fitted morally as well as mentally and physically therefor; that the whole theory of political patronage (or still better named, the spoils system) is subversive of common sense, of good government, of the very ends for which all government is established.

These are a few of the lessons which every American free school should teach every American youth. And with our United States history, with the study of our Constitution, such lessons will be found peculiarly pertinent and telling.

"TO POINT A MORAL AND ADORN A TALE."

THE condition of the San Francisco schools for some time past may be said to "point a moral," though it certainly does not "adorn a tale." The general management and organization at the reopening in July, was a fair example of what John Milton meant when he speaks of "confusion worse confounded." Somewhere at the head there has surely been displayed great lack of executive ability, an incapacity to handle the eight hundred classes, as unexpected as it is startling.

In fact, for nearly two years past, this department has been in a state of "dry rot," relieved only here and there by the influence and labors of an encouraging majority of conscientious and efficient teachers.

The people of San Francisco cannot now justly claim that they have one homogeneous school department at all. The fifty-three large and small schools have been conducted by the individual ideas of their respective principals, who, in their turn, have had no direction or supervision; and two schools within a stone's throw of each other, have been as differently conducted as if one were located in Maine, and the other in Texas. There has been no omnipresent hand to restrain the too eager activity of one principal or spur on the reluctant energies of another. There has been no well-balanced mind to harmonize different theories, reconcile opposing systems of instruction, and make the successive rounds of the educational ladder occupy their fitting place in the one harmonious whole of a complete symmetrical scheme of education.

The meaning and results of the present system, or rather *un*-system, are

these: All teaching becomes one-sided; hobbies pervade some schools; in some there is not even a hobby to relieve the monotonous droning of the mechanical teacher; in schools where the principal can write, penmanship occupies a disproportionate place on the programme; and the pupils instructed by a mathematician almost believe the sky a blackboard, and all mountains made of chalk.

There is no exaggeration in the statements we make. If further evidence is needed, it is furnished in the disorganization of the department on the reopening of the schools in July.

It was believed by the educational authorities that \$725,000 would be the entire amount available for the year 1881-82, a sum apparently less by \$100,000 than sufficient to carry on the schools. Immediate retrenchment became therefore imperatively necessary.

What was to be done? On June 30th, two weeks before the opening of the schools, a meeting of the Board of Education was held, and the special teachers of music, drawing, and modern languages were dismissed, and a consequent saving of over \$20,000 effected.

This was not enough. Every alleviating measure, instead of calming, only added to the alarm of the management. The 11th of July, opening day, came. The board met the same evening. What should have been done? Under clear-headed, competent supervision the schools would have been organized precisely as usual; a week would have been given for the filling up of classes; the superintendent would have called for a statement from each principal of the number of pupils in each class of his school, and such statement presented at a subsequent meeting of the board, giving a bird's-eye view of the entire department, and enabling the board to take intelligent action. But no such statement was presented: apparently had not even been thought of. When the board met, there was no one to advise, to suggest, to inform the directors concerning the condition of the department to be legislated on. All felt the pressing necessity of decisive action; so resolutions and motions poured in. The results were precisely what might have been expected. Transfers of teachers were made by the wholesale, classes were ordered consolidated until nearly forty teachers were left without positions; classes were ordered transferred from school to school without regard to residence or the wishes of parents; briefly, in one week, the San Francisco school department was in a condition of confusion and disorder unprecedented in the educational history of this or any other American city.

After all these changes had been made, it began to be discovered that some schools were overcrowded, many classes having from sixty to eighty-five pupils each; that some of the teachers suspended from the department were among its oldest and most efficient members, and that parents and tax-payers were determined to resist the arbitrary action of the board in transferring little children to schools a great distance from their homes. So the board was compelled to retrace its steps and quietly undo nearly all that had been accomplished, but with two weeks' valuable time wasted before the department found itself again in good working order.

Now, what is the moral? Solely that something more than educational acquirements are necessary to make either a good school-master, or a good leader of school-masters; that even a year or two in Harvard, or an agreeable manner, or strong political influence, does not make a competent superintendent.

This is the moral of the recent test to which the management of the San Francisco schools has been subjected,—that educators are, after all, better fitted than politicians to manage our schools.

ARTICLES ON METHODS OF TEACHING.

WE again invite teachers who have discovered or invented methods of teaching found successful in their own practice, to share their success with the profession, by contributing to the pages of the JOURNAL. If this periodical were financially able, we should offer to pay for such articles; but it is not, nor can it ever be, unless teachers for their own sake will show the necessary *esprit de corps*, and aid the conductors in making it what it should be.

The condition of the JOURNAL is peculiar and exceptional; its field is very limited, and its advertising patronage sensitive. Its possible patrons are of three classes: those who want the very best educational literature, both for methods and for the ethics of teaching; those who want the best, but consider anything published within their own State as *prima facie* not the best; those that do not and will not read any educational journal, but reserve the privilege of declaring that there isn't one worth reading. It is only the first of these classes we shall try to suit.

To aid us in this task we again invite the cordial co-operation of the educators of the State. We need a revival of interest in this JOURNAL—in educational circles generally. Let us be flooded with articles, suggestions, correspondence. We have a larger working force on the JOURNAL now than ever before, and if we can have one of the old-time “booms,” we are satisfied the entire profession on the coast will profit thereby.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, EDITOR.

SPECIAL DISTRICT TAXES.

“In the month of April, —— district voted a special tax of one thousand dollars for building and furnishing purposes. The returns of their vote were not made until July 5th. In the mean time a new district was formed, taking a part of the original —— district, and has also voted a special tax. Now, in pursuance of an order of the Hon. Board of Supervisors, I am directed to ask for your written opinion as to whether the entire territory of the former —— district should be included in the assessment for said district, or as it now stands after the formation of the new district, which took off a part of —— district.”

——, County Clerk.

Answer. Section 1837 of the Political Code requires the board of supervisors, at the time of levying the county taxes, to levy a tax upon all the taxable property in the *district voting the tax*, in cases where a special tax is voted. I find no authority in the statutes for excluding from the tax any portion of the territory voting the tax, even if it is subsequently divided.

A. L. HART, Attorney-General.

VACANCIES ON COUNTY BOARDS.

"Please inform me whether or not a member of the County Board of Education, he being a school-teacher, going into another county to teach during the summer, leaving his household goods, and intending to return in the fall, would create a vacancy in the Board of Education, the member not having resigned."

Answer. The temporary absence from the county of the member of the County Board of Education will not create a vacancy in the office of such officer.

A. L. HART, Attorney-General.

RE-APPORTIONING BALANCES—SECTION 1621 ONCE MORE.

"Some of the trustees and attorneys in this county claim, that the balance in the funds of those school districts not having held an eight months' school cannot be re-apportioned this year, from the fact that it was impossible for them to complete an eight months' school between the time the bill became a law and the end of the school year. Will you please give me your opinion and that of the Attorney-General on this point?"
——, County Superintendent.

Answer. My opinion is, that the act embodying the amendment to section 1621, having been approved March 4th, 1881, and section 27 of that act, reading as follows: "This act shall take effect immediately,"—it is now in full force and effect; and that the surplus funds of districts which have failed to maintain an eight months' school must be re-apportioned this year.

Moreover, the amending of the section did not change it in any other way than to make it express more clearly what it had always meant, and, as I have read it, always has said, too. (See Official Department of JOURNAL for April, page 158.)

Nor is this any new opinion. In a circular of instruction issued by me on the 17th of July, 1880—six months before the Legislature met, and seven months before the amended law was passed—the following paragraph appeared:

"Trustees are *compelled*, when there is sufficient money to the credit of a district to do so, to maintain an eight months' school; and the closing of a school for the year, until it has been maintained eight months, that the money derived from the State and county may be used for any other purpose, is to defraud the children of the provision made for them during that year, and should not be allowed. Section 1621 is very clear on this point, and specifically provides, that the only way in which the right to use any balance of State or county funds that may be to the credit of a district at the end of the year, for the payment of outstanding claims, or for the year succeeding, is to have maintained a school for *eight months*. If a balance cannot be used for payment of old claims, nor for those to be created in the future, it cannot be used at all. I have therefore decided, that all balances of State and county moneys remaining on hand at the end of the year, to the credit of a district which has failed to maintain an eight months' school, should be re-apportioned among the districts of the county. And this is equity, too. If a district fail to maintain a *six months' school*, whether the funds derived from the State and county are sufficient or not, it loses its entire next year's apportionment. It is but right that, if a district, having *sufficient funds furnished* to it for the purpose, fail to maintain an *eight months' school*, it should lose the benefit of any balance saved by such neglect of duty."

As the foregoing letter contained a request for the opinion of the attorney-general, I submitted the question to him, and the following is his reply.

FRED. M. CAMPBELL.

It is my opinion that section 1621 of the Political Code as amended in 1881, in relation to re-apportioning school moneys, should be enforced this year.

A. L. HART, Attorney-General.

LIFE DIPLOMAS.

A diploma from McGill College, Canada, is not a "Life Diploma" within the meaning of the term as used in section 1775.

RENEWING STATE CERTIFICATES.

I am sorry not to be able to accede to the request so politely expressed in your letter, and so warmly indorsed by your superintendent. The power to issue State certificates ceased upon the adoption of the new Constitution, and with it also the power to renew those previously issued. The State Board of Education is continued, with power to issue Life Diplomas and Educational Diplomas, which are recommendatory to the local boards. These diplomas are issued upon the conditions expressed in section 1521 of the Political Code.

MEETINGS OF THE STATE BOARD.

The State Board of Education will hold four regular meetings annually, as follows: on the third Saturdays of March, June, September, and December. The next meeting will therefore be held on Saturday, September 17th, 1881. Applications for diplomas filed after that date cannot be acted upon until next December.

ORPHAN ASYLUMS AND CENSUS REPORTS.

I have delayed replying to your letter concerning the census report until I could get the opinion of the attorney-general, having already given my own opinion, as published in this department of the June number of the JOURNAL, page 247. The general says that section 1638 of the Political Code governs; that the sisters in charge of the institution are not guardians of the children within the meaning of the law, unless they have been duly appointed by a competent court; and that, unless there is proof of such appointment, the children should not be included in your report.

RENEWED COUNTY CERTIFICATES.

In your letter you ask me to satisfy myself as to the time for which your certificate is valid, adding, that you claim it will be valid till July 6th, 1883. The facts of the case, as I understand them, are as follows: On the 4th day of September, 1875, your County Board of Examination issued to you, upon examination, a first grade county certificate, valid for three years; that in September, 1878, the same was renewed by competent authority, which action was intended to make it valid until September, 1881; that in the mean time, by the adoption of the new Constitution, the whole matter of teachers' certificates having passed into the hands of the County Board of Education, you applied to that body for a renewal of your certificate; that, in answer to your application, the board took the following action, as shown by the minutes:

"It was moved and seconded that the certificate of —— be considered valid until the 6th day of September, 1881. Carried."

Section 1775 of the Political Code provides for the issuing of certificates without examination, and then further provides that the board "may, without examination, renew certificates previously issued by them, or previously granted in their county; such renewed certificates to remain valid *for the same length of time for which the original certificates were issued.*"

Now, if a board renews a certificate, it does so by authority of the section of the Code just quoted, and must be governed by all the provisions of the section. In other words, if a board renews a certificate, it is not necessary to specify the length of time for which it is to remain valid, for the very provision of law which makes the renewal possible, itself fixes the time. Any resolution, therefore, providing for the renewal of a certificate which shall assume to either lengthen or shorten the time fixed by law for the validity of such renewed certificate is clearly illegal, and therefore null and void. It is, of course, within the power of the board, for reasons which may seem to the members to be good and sufficient, to refuse to renew a certificate, and it would seem that the same considerations which would lead a board to see its duty in a refusal to license a teacher for the full legal time should operate with equal weight and force, to cause them to refuse any renewal and any license whatsoever.

The resolution is a peculiar one, inasmuch as it is neither a renewal, nor anything else for which I can find any provision of law. It is my opinion, therefore, that, so far as your certificate is concerned, you are in precisely the same condition as though the board had taken no action at all.

MANIKINS FREE OF DUTY.

"We are proposing to raise a fund in our district to purchase a German manikin, and it has been suggested that perhaps you could arrange for its being admitted free of duty. Will you please see if it can be done, and let us know?"

In accordance with the foregoing request, I waited upon Eugene L. Sullivan, Collector of the Port of San Francisco. That gentleman entertained the proposition with characteristic courtesy, and in consideration of its being for use in a public school, he cheerfully granted the request, simply requiring that he be notified a short time before its expected arrival. The manikin costs in Germany, I believe, a hundred and fifteen or twenty dollars.

The above letter was received from J. T. Wallace, Esq., teacher at Dixon, Solano County, and he will doubtless be willing to give what information he may have upon the subject to any who are sufficiently interested to correspond with him concerning it. (This last, by the way, is entirely gratuitous on my part; but, though I have not the pleasure of a personal acquaintance, it is based upon a moral certainty that he is a live man, a progressive teacher, and willing to help on our "great work" in any way that he can.)

HOW SHALL SCHOOLS BE GRADED?

"Can the school superintendent go outside of the teacher's report in grading a school? For instance, the last teacher employed in this district—one, too, who had taught here three consecutive years—reported this a second-grade school,

which is entirely correct; but the county superintendent wants to make it a first-grade. I ask again, can he?

"Also, if two of the trustees have decided on a teacher, and want school commenced at a certain time, can the superintendent withhold the grade, and have the opening of the school postponed on that account?"

The only provision of law concerning the grading of schools is found in subdivision fifteen of section 1543 of the Political Code, which reads as follows: "He (the superintendent) shall, unless otherwise provided by law, in the month of July in each year, grade the schools; and a record thereof be made in a book to be kept by the county superintendent in his office for said purpose. And no teacher holding a certificate below the grade of said school shall be employed to teach the same. All schools shall be designated as Grammar and Primary Schools." As there is no special law upon the subject for your county, the above governs.

It will be seen that the matter is entirely in the hands of the county superintendent, and he is at liberty to obtain the information necessary, as a basis for intelligent action, in any way that to him may seem best, by actual examination, upon the report of the trustees, upon that of the teacher, or upon all these combined. As a general proposition, however it may be in this particular case, it would be manifestly unsafe, and therefore improper, to invariably grade the schools in accordance with the reports of the teachers; because, being after all but human, it might sometimes be an unfair and undue test of conscientiousness to place the teacher in the position of deciding, the question being a close one, whether she should or should not grade herself out of a desirable situation, especially if it should appear to her, as it might, that she could do better by the pupils than anybody else.

As to the delay in opening school, of course the trustees can open the school at any time they shall determine; and the school being ranked as a primary school until it is regraded, they can employ a teacher with a second-grade certificate; but if the question of the grade of the school is still an open one, it would be better for the school, the teacher, and all concerned, to defer the opening until the matter is determined, than, by opening now, to take the chances of changing teachers after school has been commenced.

BLANKS.

As superintendents, school trustees, and teachers are fresh from laboring over their reports, the time is auspicious for suggestions from them concerning such changes in the form of any or all of the blanks sent out from this office as in the opinion of those officers would aid them in collecting and conveying the information required. The changes suggested by the Committee of the State Convention, which had the matter in hand, have been made, and the blanks thereby greatly improved in point of clearness and tests of correctness. It may be that still greater improvements can be made. Brother Goin of Yolo has suggested some, and the State Superintendent would gladly hear from other counties.

TEACHERS' CERTIFICATES AND UNIVERSITY DIPLOMAS.

1. It is necessary for every person proposing to teach in a county to apply for and obtain the certificate of that county, no matter what other certificate is held,

not excepting a Life Diploma. Section 1775 of the Political Code, as amended March 4th, 1881, specifies the credentials upon which a local certificate may be granted without examination. The new constitution relegated the whole matter of teachers' certificates to local boards.

2. A diploma from the Hastings' Law School would not, in my opinion, come within the meaning of "California State University Diploma," as used in section 1775 of the Political Code.

APPORTIONING FUNDS TO NEW DISTRICTS.

Your letter of the 11th is before me. In it you ask for the construction of section 1859 concerning apportionment of funds to new districts. There are four sections of the Code bearing directly on that subject: section 1580, to the effect that the school must be *actually commenced* in the new district before it is entitled to any share of the money apportioned to the old district; section 1581, that if school shall not be commenced in the new district within four months, the order creating it ceases; section 1582, providing the method of apportioning the money on hand at the time of division between the old and the new districts, and also providing for the division between them, of "such as may *afterward* be apportioned to the old district"; section 1859, defining how long such division of the funds of the old district shall continue; or, in other words, how long before the new district shall be entitled to its own apportionment as an independent district. The section on this subject reads as follows: "But any new district formed by the division of an old one is entitled to *its* apportionment (as an independent district) when school has been maintained, in the old district before division, and in the new district after division, at least eight months in all."

Now, unless there is some limit of time within which these "eight months" shall fall, the section would be meaningless, because no district would be divided which had not previously, during all the time, (years probably) maintained school eight months. I have therefore held, that the "eight months" must all be in the year in which the division took place; or, failing in that, the new district must maintain a school by itself eight months in one year.

PUPILS FROM OTHER DISTRICTS.

"When pupils attend school in a district in which they do not reside, must a per capita of *all* the money drawn by such children be transferred to the district in which they attend school, or only their proportion of the pro rata money?"

In accordance with subdivision 14 of section 1617, boards of trustees have power "to make arrangements with the trustees of any other district for the attendance of such children in the schools of either district as may be best accommodated therein, *and to transfer the school moneys due by apportionment to such children* to the district in which they attend," etc.

As no mention is made of *any particular part* of "the money due such children by apportionment," it is but reasonable to infer that all the money so due by apportionment to such children is to be transferred to the district in which they attend school. If the legislature had intended to limit it to *State* money, or *county* money, or *pro rata* money, it would have been so stated in the law. In the absence of such limitation it was undoubtedly the intention that the *whole amount* drawn by apportionment by these children should be transferred.

ELECTION OF TRUSTEES VOID.

"Notices for our last school election were posted, stating that the polls would be open two hours only, and the polls were closed accordingly.

"Two trustees were elected, certificates given, they qualified, and all the papers were in due time forwarded to the County Superintendent.

"Many voters complained of being disfranchised by the polls closing so soon, and, by a petition of two-thirds of all the voters, asked the County Superintendent to set aside the election as void, and fill vacancies by appointment. He refused to interfere in the matter, and so it stands. The people here would like your opinion. Please answer the following questions through the JOURNAL:

"1st. Is an election for school trustees legal in which many qualified electors are deprived of their ballots by reason of the polls being kept open only two hours?

"2nd. What was the County Superintendent's duty when these facts were shown to him as positive?"

Answer. Section 1597 of the Political Code prescribes that, "In districts in which the number of children between five and seventeen years of age exceed five hundred the polls must be opened at 8 o'clock A. M., and kept open till sundown. In other districts the polls must not be opened before 9 A. M., nor kept open *less than four hours*."

1st. The election having been announced and conducted in direct and open opposition to the law as laid down in the foregoing section, it is null and void, and a vacancy exists "by failure to elect."

2nd. It was the duty of the Superintendent, upon the presentation of the facts as stated in your communication, the same being duly certified, to declare the election invalid, and to have appointed two trustees to fill the vacancy so created, by the authority vested in him by section 1543, subdivision 12, which reads as follows: "It is the duty of the County Superintendent of each county to appoint trustees to fill all vacancies created by failure to elect, or otherwise, to hold until the next annual election."

COUNTY INSTITUTES.

The San Mateo County Institute will commence on the 5th of September; that of Sonoma County on the 12th of September, and continue five days. That of Tehama County will commence on the 14th of November, and also continue five days. It is the intention of the State superintendent to attend all these, as he was last year prevented from attending in either of these counties.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. McCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN AUGUST.—*Mercury* is a morning star, rising on the 9th at 3 h. 37 m. A. M., on the 19th at 3 h. 57 m., and on the last day with the sun. He is near the moon on the 24th. *Venus* is a morning star, rising on the 9th at 1 h. 34 m. A. M.; on the

19th at 1 h. 37 m. A. M., and on the last day of the month at 1 h. 45 m. A. M. She is near the moon on the 21st. *Mars* rises on the 9th at 11 h. 34 m. P. M., on the 19th at 11 h. 8 m. P. M., and on the last day of the month at 10 h. 38 m. P. M. He is near the moon on the 17th. *Jupiter* rises on the 9th at 11 h. 9 m. P. M., on the 19th at 10 h. 28 m. P. M., and on the last day at 9 h. 40 m. P. M. He is near the moon on the 16th, and in quadrature with the sun on the 17th. *Saturn* rises on the 9th at 10 h. 23 m. P. M., on the 19th at 10 h. 7 m. P. M., and on the 31st at 9 h. 18 m. P. M. He is near the moon on the 15th, stationary among the stars on the 25th, and in quadrature with the sun on the 4th.

THE comet discovered by Prof. Schæberle of Ann Arbor, July 13th, can now be seen through an opera glass, and will soon be visible to the naked eye. It is expected to be one of the most conspicuous comets of the century. During the latter part of August it will be in the constellation Coma Berenices.

M. BELLINI of Florence advocates the use of iodide of starch as an antidote for poisons in general; and, as it has no disagreeable taste, and is free from the irritant properties of iodine, it can be administered in large doses; also without fear in all cases where the poison is unknown. It will be found very efficacious in poisoning by sulphuretted hydrogen gas, the alkaloids and alkaline sulphides, ammonia, and especially by alkalies, with which iodine forms insoluble compounds; and it aids in the elimination of salts of lead and mercury. In cases of acute poisoning an emetic is to be given before the antidote is administered.

It is said that a dense black gum may be obtained from the outer layers of the birch-tree bark by distillation, which possesses all the ordinary properties of gutta percha, and has the additional merit of resisting the deteriorating influence of air and the corrosive action of acids. This advantage makes it useful as an ingredient of India rubber and gutta percha, which it renders far more durable. Whether these statements are true remains to be proved.

A GENTLEMAN connected with chemical works has informed the Glasgow Philosophical Society that, after experiments since 1866, he has succeeded in obtaining crystalized forms of carbon which Professors Tyndall and Smyth and Mr. Maskelyne of the British Museum do not doubt are diamonds.

PROF. BOUCHARDAT attributes to the vine powerful sanitary properties. He asserts that wherever it is cultivated to any considerable extent there is a very sensible diminution of intermittents. The virtue is attributed to the action of the vine on the effluvia which cause fevers.

DR. THEOBALD lately exhibited a beetle at a scientific meeting, giving these figures to illustrate its physical strength: weight of beetle, 2 grains; weight moved by it, $5\frac{1}{2}$ ounces—1,320 times the weight of the beetle. A man of 150 pounds weight, endowed with the strength of this insect, should therefore be able to move 198,000 pounds, or nearly 100 tons.

ELECTRIC lamps are extremely attractive to insects of various orders. The writer noticed clouds of them about the lights used for the illumination of Prospect Park and Niagara Falls last summer. Their shadows on the lawns and walks, sharply-defined, gigantic, and crazily active, made a pantomime as fantastic and weird as it was amusing. This artificial sunlight is likely to become a favorite hunting-ground for the entomologist.

PROBABLY the largest astronomical apparatus in the world will be one of the equatorials now in course of construction for the new observatory at Nice. Its focal distance will be about 60 feet, and its aperture 30 inches. The observatory will also be the finest in Europe, if not in the world, and will cost fully 2,000,000 francs, while the instrument referred to will cost 250,000 francs.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.

SAN FRANCISCO COUNTY.

Many important changes have been made in the schools in this city during the past six weeks. The entire amount available for 1881-82, is about \$725,000, against more than \$800,000 for the previous year.

All the special teachers of music, drawing, book-keeping, and modern languages, sixteen in all, have been dismissed from the department, thereby effecting a saving of over \$20,000.

The schools will, this year, be closed two weeks in September, instead of the usual one week. Teachers will, however, receive no pay for the whole of this time.

After a contest protracted for over a month, F. A. Blackburn, teacher of Latin and Greek in the Boys' High School, was elected principal of that school, vice W. T. Reid. The vote in the Board, for a long time, stood six for Blackburn, to six for O'Connor. Mr. Joseph O'Connor, the defeated candidate, is one of the ablest principals in this department. A thorough scholar and a man of the highest executive ability, he is at the same time a progressive educator, one who has ideas, and the energy to put them in practice. Mr. Blackburn is a finished scholar, especially in philology; what he can do in a position requiring administrative talent will be shown in the important position to which he has been elected.

His promotion vacates the Latin and Greek professorship, nominations for which have been made. We trust the Board will take advantage of the opportunity and elect a gentleman who deserves the best that can be done for him, on account not only of his high ability and thorough scholarship, but by reason of the unswerving rectitude of his official career, and his commanding position as one of our foremost educators. We refer to Ex-Superintendent A. L. Mann.

Among the changes made last month was

one certainly not in the best interests of the department. This was the transfer of Principal Silas A. White with twelve grammar classes to the Haight St. building, and the placing of Miss Haswell of the latter school in charge of the Valencia building with twenty-two classes. The ostensible reason for this change is, that it will give one complete grammar and one complete primary school in the south-western part of the city. As the Valencia school, however, retains one or two grammar classes which will certainly be greatly increased next year, we fail to see the utility of this move. Mr. White stands among the two or three best principals of the city. He is not only an indefatigable worker, with the very best of executive ability, but he is a progressive man who knows just what to do, and when and where to do it. He has built up this Valencia school from nothing to one of the best conducted, most popular schools in the State.

Prof. C. H. Silliman, teacher of one of the middle classes in the Boys' High School, has resigned to go into business in San Diego. Professor Silliman was an able teacher, ambitious, energetic, and conscientious. With these qualities, we predict that he will figure among the "solid men" of the State before many years have passed over his head.

The Supreme Court in the appealed case of Harvey vs. Danielwitz, decided in favor of the former. By a decision of the Supreme Court, Mr. Danielwitz has been in the Board for five months past. He has made in every way an excellent Director, visiting the schools, familiarizing himself with all the details of the department, courteous in his demeanor towards all with whom his position brought him in contact.

ALAMEDA COUNTY.

Alameda County is talking about having an industrial school. There is need of it.

KERN COUNTY.

They have a Normal School at Visalia, according to the *Weekly Record*.

The veteran pedagogue of Kern County, is A. B. McPherson, says the *Record*.

A writer in the *Record* is "going after" the credit system as carried out in district schools, and says, "dishonest teachers may be known by their own reports. If the report shows a large proportion, almost perfect, 90 per cent. or more, dishonesty may be suspected."

LOS ANGELES COUNTY.

Bonds to the amount of \$5,000 have been ordered to be issued to build a new school-house at El Monte.

A new school district has been created and named Silverado. An election will soon be ordered to vote on the question of a school-house. Samuel Shrewsbury, F. P. Carpenter, and Brainard Smith are the trustees.

Mr. C. N. Moores is the new principal of the Anaheim School.

J. J. Guinn, brother of City Superintendent of Schools, was thrown from a wagon at Los Angeles recently. His head was bruised badly and his back broken.

The value of property in San Bernardino County is \$64,000.

There are 10,609 school children in this county.

TEHAMA COUNTY.

The trustees of Gleason school district have voted a tax of \$500 for building a new school-house.

The trustees of Happy Valley school district have voted a tax of \$600 for a new building. Assessment rolls have been ordered for the two districts.

James Little, a teacher employed at Canon City, has eloped with a girl of fourteen. Notice is out for his arrest.

Red Bluff school has eight teachers. E. O. Graves is principal.

The Teachers' Institute meets at Red Bluff on Monday, November 14th, and continued five days.

Red Bluff Academy—Mr. Gans principal—seems to be flourishing, and hopes to enlarge its building soon.

G. W. Gale of Red Bluff Academy has been elected principal of the Tehama public school. His able assistant is Miss Emma Owen. S. A. Stiles has taken the Cottonwood school; Miss Alice Merrill the Moon district.

SONOMA COUNTY.

The order restricting primary children to one-half time has been reconsidered.

The high school has been re-established by a resolution of the directors of Court-house school district by a vote of four to one.

The Manzanita school opened August 1st with J. C. Shipley as teacher, in place of Mrs. Nutter.

No change has been made in the Healdsburg schools; but the building has been repaired and the windows frosted, and every thing put in order during vacation.

SACRAMENTO COUNTY.

Miss Lulu E. Medbery, a graduate of the State University, and recently a teacher in the Sacramento High School, was lately married in Oakland to William H. Chapman, a graduate of our high school and State University.

Mrs. D. F. Smith of Oakland gave a public reading in Sacramento recently under the auspices of the Educational Institute. The audience was very large, there being scarcely standing room. The lady read very effectively, and gave general satisfaction.

SANTA CRUZ COUNTY.

Several changes have been made in Pajaro Valley, and new teachers are plentiful. Mr. Klink teaches the Corralitos school, Charles Rodgers the Green Valley school, Miss McElroy the Casserly, J. W. Martin the San Andreas, Miss Murphy the Railroad school, Miss Laura Duncan the Carlton school, and Miss Maggie Wiley is principal of the Lindley school, with Miss Ida Swauk as assistant.

Mr. Geo. Furling and wife have left this valley, where they have taught several

years, and have gone to Castroville. They are experienced teachers, and will prove socially also a valuable acquisition to the society of our neighboring town.

Watsonville pays her teachers better salaries than any other district in this county.

Miss Pardee teaches in Watsonville instead of accepting a position in Santa Cruz, as report had it.

Fred Wright is teaching on the Coast south of Monterey, and W. H. Bingamin the Springfield school.

Salaries have been cut down 10 per cent.

The Salinas school re-opened with J. H. McEwen principal; assistants, Misses Annie A. Wiber, Annie L. Luchsinger, A. M. Lyus, Nora Corey, Eva Allen, and Mr. Job Wood.

R. M. F. Soto and W. H. Bingamin have been elected members of the County Board of Education. Mr. Soto was chosen president of the board.

SAN LUIS OBISPO COUNTY.

The schools have been closed in San Luis Obispo County on account of malignant scarlet fever. There is much excitement.

The proposition to issue bonds for \$12,000 to build a school-house in Woodland was voted on and defeated. Ayes, 178; noes, 140. Two-thirds required to carry it.

SANTA CLARA COUNTY.

Prof. Schuck, late principal of the Cloverdale public school, and a gentleman of rare educational ability, has been offered the advanced position of principal of the fine graded schools of Gilroy.

The Kindergarten interest in San José seems to have gone down to near zero.

The Normal School opened August 9th.

A telephone line between the Astronomical Observatory on Mt. Hamilton and town of San José is being erected.

San José is revising the course of school study for that town.

The Saratoga school has changed principals. One result has followed very promptly: the class in that room has been reduced

50 per cent.; they follow their old teacher four miles to Los Gatos. The new principal is Mr. Pollard.

Prof. Leggett has been appointed principal of the high school at Hollister, in place of Mr. Black, who has gone to Oakland.

YUBA COUNTY.

Miss Ella McCleery of Sacramento has been elected principal of the primary school at Wheatland, to succeed Miss M. Bradner, promoted to the higher grade, formerly taught by Mr. John Durst.

J. H. Steele, superintendent of schools, has got back to his office again, after a long vacation on account of failing health.

SOLANO COUNTY.

The cornerstone of the new school building in Benicia has been laid.

SAN DIEGO COUNTY.

The old town school is progressing favorably under the management of Mr. Butler.

Miss Mary Hickey of Mission Valley school has returned to the Normal school to complete the course, seemingly determined to thoroughly fit herself for teaching—her chosen profession.

Miss Eberhart has returned to her school—her second term—at the Poway district.

Prof. Kleeberger is lecturing on comets in San Diego, illustrating by photographs by Prof. Draper. It is not every school-teacher that can do it well.

The school at San Dieguito is under the charge of Miss Carpenter. She is young, but seems to be determined to succeed.

Mr. Lawson is looking after the interests of the Indians in his district.

There is to be a new school building in San Diego.

COLUSA COUNTY.

There is to be a new school-house at Colusa.

OREGON.

Henry Villard, the railroad president, has relieved the Oregon State University

from debt by drawing his check for the amount, and presenting it to the Regents.

NEVADA.

F. N. Stone of Elko will be principal of the State University, as the rumor goes.

W. S. Brown, the artist, has made a fine picture of the university and grounds for the history of Nevada, soon to be published.

ARIZONA TERRITORY.

Mr. Vallie White has been appointed to the Naval Academy, having passed the recent examination successfully. He is a bright, intelligent young man, and well worthy the appointment.

Stella A. Morehouse is writing good articles on the value of trained teachers, in the "Globe."

NEWS RECORD.

OUR record extends from JUNE 30th, to JULY 30th inclusive.

Foreign and Domestic.

The entire country is already thoroughly acquainted with the attempted assassination of the President, which occurred on the 2d of July at Washington. At date of writing, July 20th, his life is still hanging in the balance, while every heart in the nation anxiously hopes for the best.

Messages of sympathy with Mrs. Garfield, and for the American people, have been sent by all the sovereigns of Europe. Queen Victoria's message of sympathy to Minister Lowell is the fourth of its kind that she has sent.

United States District Attorney Corkhill, who has had in charge the preliminary investigations respecting Guiteau, publishes a statement which is reported to be based on Guiteau's own confessions. He formed the purpose May 18th; he borrowed money, ostensibly to pay his board bill, and with it bought a pistol; practiced to insure a good aim; once followed the President to church, with the idea of assassinating him there, but abandoned the idea because he could not execute it without endangering others; on several other occasions dogged him, pistol in hand, but could get no chance to execute his murderous design till July 2d, in the station. It thus appear that the design was pursued for over six weeks before it was finally carried into effect. If this was the persistence and cunning of a madman, it is certainly the duty of the State to protect itself from such madness as effectually as from crime.—*Christian Union*.

The mails give us some additional information respecting the Jewish persecutions in Russia and their effects. It is said that the damage at Kieff produced by the anti-Jewish mob amounted to 3,000,000 rubles, nearly \$2,500,000. In one town the Jews, apprehending a raid from their persecutors, destroyed part of their furniture and threw the fragments into the street, so that the raiders, when they came, should be led to believe that the Jewish quarter had already been sacked; but the ruse was not successful.

In Vienna a public subscription in aid of the sufferers from the outrages upon the Jews in Russia has been opened with a large contribution from the Messrs. Rothschild. The Spanish government is reported to have given public notice that all Jews who wish to come to Spain will find themselves there protected by the law. The age in which men can be persecuted, either for their race or their religious belief, without greater injury to the persecutor than the persecuted has passed away.—*Christian Union*.

The Land Bill, mainly intended to give relief to the Irish tenantry and quiet that disturbed country, after passage by the House of Commons, has been radically amended by the Lords. The two Houses being unable to agree a Conference Committee has been appointed.

Action will be taken early this week by several members, moving a vote of censure upon the government for their course in relation to the Transvaal. The draft prepared by the Royal Commission virtually retrocedes the whole of the Transvaal to

the Boers. No disturbances are reported in Ireland.

France having shown evident intentions of making Tunis a permanent acquisition, the uprising in Northern Africa becomes more serious in its proportions and more threatening even than was first anticipated. The troops of the Bey of Tunis have deserted in large numbers. Over one thousand Spaniards in the district of Oran, in Western Algeria, have been massacred or carried away captive by the Arab banditti, their houses and factories burned and their fields ravaged. Troops of Arab horsemen are raiding through Tunis and Algeria, whom the poorly equipped French cavalry are quite inadequate to pursue, and from whom the French infantry are no protection.

The trial at Constantinople of the persons supposed to have been instrumental in murdering the late Sultan Abd-ul Aziz has resulted in the conviction of Midhat Pasha and eight others, who have been sentenced to death. Izzet Pasha and Seid Pasha, who were also implicated, have been sentenced to ten years' penal servitude. Midhat Pasha conducted his own defense, and in any civilized country would have been triumphantly acquitted. His sentence was commuted to exile. So the Turkish Empire loses one of its few able and honest rulers in the hour of its utmost need.

The long contest in the legislature of New York over the election of two United States Senators has at length come to an end by the election of Hon. E. G. Lapham as the successor to Senator Conkling following the election of Warner Miller as the successor to Senator Platt.

Another comet has made its appearance in this latitude. At present it is 150,000,000 miles away.

Intensely hot weather has prevailed throughout Europe and the Eastern United States, for three weeks past. Fatal cases of sunstroke have been numerous, and the utmost distress has prevailed owing to the terrible heat.

Educational.

Among the candidates from the Cambridge High School for admission to Harvard College were two girls. One was admitted without conditions, and the other conditioned in arithmetic only.

Of eight girls sent to the Boston University for examination, three passed in everything, two failed in one study, and one in two.

Brooklyn matters have reached a climax in the robbing of the safe of the board of

education. A discrepancy of \$50,000 had been found in the accounts, and an investigation had been ordered. Some fifty bound volumes and thousands of vouchers are missing. The discrepancy has been traced to Secretary Stuart, who is said to live in \$7,000 style on a salary of \$3,000.—*School Bulletin*.

In Austria the cause of education is greatly neglected. So poorly are teachers paid that very few persons seek the profession as a means of livelihood. There are now in that country 6,379 schools that have no permanent qualified teachers. Of these, 4,783 places have been temporarily filled with individuals who have received no suitable training, and 1,596 schools had to be closed altogether, as even these untrained teachers are beginning to become scarce.—*Educational Weekly*.

The new compulsory educational law in France provides, among other things, for instruction in the duties of citizenship and the constitution of the country, elementary notions of political economy and law, and gymnastics.

A member of the school board of London, England, Hon. Mr. John J. Jones, is now in Canada, investigating the system of schools in operation there. He will come to this country also, and spend several months in a study of our schools.

Belgium promises to become the great industrial teacher of Europe. Many foreigners are now attending her schools. She has 59 technical schools, 32 industrial schools, and a higher commercial school, all receiving funds annually from the State.

The northwestern provinces of India have made astonishing progress in free education. There is hardly a village without its government school, wherein are taught reading, writing, arithmetic, the geography and history of India, and in the higher class a little Euclid. These schools are governed by local committees made up of Europeans and native gentlemen.

Linda Gilbert is collecting a fund — \$500,000 — for an educational and industrial reformatory in the city of New York. It is to be a moral hospital, conducted upon the conviction that many bad men may be reformed through education and judicious counsel.

John P. Howard of Burlington has given \$50,000 to the University of Vermont, the largest individual gift ever made to the institution. The income is to be applied to the endowment of the Howard professorship of natural history, the purchase of specimens, apparatus, etc., in the department indicated, and to increase the University library.

The University of Naples has recently added the following studies to its course of instruction: International law, diplomatic and consular law, history of treaties, commercial and colonial economy, and history of commerce.

The public school enrollment of Sweden in 1880 numbered 613,424, in 8,706 schools. This gives an average enrollment of 70 pupils for each school.

The public schools of Victoria, Australia, enroll a larger proportion of the children of school age than are found in the public schools of England, and more than in any one of the Southern States of the Union.

The city of Paris alone spends 14,572,641 francs per annum for educational purposes, or as much as the entire kingdom of the Netherlands, with a population of 3,500,000, and within less than 2,000,000 francs as much as Bavaria, with a population of 5,500,000.

The number of pupils in attendance upon the schools of Germany is 154 for each 1,000 inhabitants; of Sweden, 154; of France, 127; of Belgium, 124; of England, 100; of the Netherlands, 91; of Austria, 89; of Italy, 70; of Spain, 50, and of Russia, 15 for every 1,000.

Before candidates for the place of teachers in the secondary schools of Prussia can receive regular appointments they must not only pass examination before a royal commission, but they must serve a year's probation in some school to which they are assigned, and show aptness for the vocation.

The Educational Congress just held in Paris recommended that primary instruction in France should be rendered obligatory, and advised the creation of primary schools in hamlets three miles distant from the central town or village of the commune, the creation of sectional schools for several outlying hamlets contiguous to each other, and the establishment for each teacher of a class maximum. Forty pupils were as much as a school master or mistress could attend to. The cramming system was condemned. M. Jules Ferry, the Minister of Public Instruction, assured the Congress that instruction would be rendered obligatory, and promised to fix the class maximum at forty. There are now 4,700,000 children taught in the French communal schools.

Prof. Moses Coit Tyler has accepted an appointment as Professor of History at Cornell University, and Michigan University suffers the loss of another of her great-est men.

In March the Legislature of Texas, by a vote of 70 to 7, authorized the beginning of

university work. There is to be a Board of Regents nominated by the Governor and confirmed by the Senate—one from each congressional district. Appropriation for the building, \$150,000. An endowment fund of \$700,000 is now in the State treasury, and this will be increased, it is thought, to \$2,000,000. It is stated that the presidency of this University has been offered to Dr. W. T. Harris, ex-superintendent of St. Louis, at a salary of \$5,000 per annum.

The new Manual Training School in St. Louis promises to be very successful. It has a serviceable building, an income of \$4,000 guaranteed for five years, and \$10,000 was raised for the purchase of necessary appliances. The school now has 60 pupils, many of them belonging to prominent St. Louis families. A tuition fee of \$240 is charged for the course.

During the session of the University of Edinburgh of 1880-81 no fewer than 3,150 students were in attendance. The greatest proportion of these studied in the medical classes. The general library of the University contains over 160,000 volumes, besides many rare manuscripts. In addition to this, there is a valuable theological library.

The school board of Boston have abolished the evening high school, and a journal in that city urges that all night schools should be discontinued or carried on through private beneficence. The Rev. E. E. Hale, Wendell Phillips, and others have protested against this action of the school board.

Dr. John Hancock has been re-elected superintendent of the Dayton public schools. Salary, \$3,000. His election is for two years, in place of the usual term of one year—certainly an improvement.

The Portuguese government is taking steps to exclude Jesuits from the management of all grades of schools. They control at present a large proportion of the higher institutions of learning.

J. H. Hoose has been elected superintendent of the public schools of Binghamton, N. Y. He has not yet resigned the principalship of the Cortland Normal school. It will be sometime before his status in reference to that school shall be finally decided by the court of last resort.

The Baltimore Biblical Institute, established for the education of colored preachers and teachers, had, during the past year, an attendance of ninety-six students. It has just finished and dedicated a new building, which will enable the school to accommodate 150 young men.

The colored Normal school at Hampton, Va., graduated this year a class of 20 students.

Maryland has 2,009 public schools, which instruct 165,486 pupils. The total school expenditures during 1880 were \$1,557,556.32. The State has 373 colored schools, which employ 387 teachers, and instruct 22,331 pupils.

The schools of Mississippi are in a very neglected condition. The school population, white and colored, is over 380,000. The schools have, however, an average attendance of but 125,000, and the school session averages but two and a half months in the year.—*Educational Weekly*.

A proposal in the Boston school board to reduce the salaries of the school teachers of that city gave the Rev. George A. Thayer a chance to free his mind on the subject in a minority report. He had obtained estimates, he said, from careful and trustworthy persons of the incomes enjoyed by the successful members of the learned professions in Boston. Fifty lawyers make \$10,000 a year and upward; one hundred make from \$5,000 to 10,000; one hundred or more make from \$3,000 to \$5,000. Eleven doctors are believed to make \$20,000 a year, forty from \$10,000 to \$20,000, eighty from \$5,000 to \$10,000, and two hundred from \$3,000 to \$5,000. In three leading Protestant sects, twenty-one ministers receive salaries ranging from \$4,000 to \$10,000. For his part, the Rev. Mr. Thayer thought that Boston should seek for the teachers of its children large-minded persons, whose abilities would have earned them distinguished success in any of these other professions, or in trade. But it could not get such teachers unless it was prepared to assure them honorable comfort, and an old age free from care about money.—*School Journal*.

Minnesota has a law, to go into operation July 1, to the effect that all school officers may introduce into the schools daily instruction in social science, good morals, and patriotism, no less than thirty distinct topics being specified, such as industry, health, honesty, etc. It may be required of the teachers to give a short oral lesson each day on one of the subjects named, and to require from the pupils some illustration of the same upon the following morning. There may not be entire agreement as to the best way of imparting instruction in the public schools on these subjects, but that the schools in some way ought to be made more effective in teaching them scarcely any one will doubt.—*N. E. Journal of Education*.

All the professors now at the university at Yedo, Japan, are said to be Germans, the English and French masters having been discarded. All branches of study, except theology, are represented in the

university and a thousand students are receiving instruction therein. Most of the students go into the medical profession, as this pays better in Japan than any other. Each professor of the university has a house and garden and a salary of \$6000. He is, moreover, permitted to earn something additional by private lectures. The Japanese minister of public instruction is a German. The Chinese, it is reported, are also starting a German university at Peking.

A new college for technical education has recently been established in London, and Prince Leopold has laid the foundation stone of a building which is to cost about \$125,000. In a little speech, the Prince said: "The old apprenticeship system, whatever its merits may be and whatever good work it may have done in the past, is not equal to the exigencies of the present age, and we are beginning to realize that a thorough and liberal system of technical education must be placed within the reach of the British artisan, in order to enable him to hold his own against foreign competition."

The Concord School of Philosophy opened July 11th and will continue for five weeks. The terms are three dollars for each of the five weeks. Single tickets, fifty cents each. Mr. E. C. Stedman read a poem at the opening session. Professor W. T. Harris will give ten lectures on philosophy; Dr. Jones, five; President Potter, Mrs. Julia Ward Howe, and Dr. Hedge will lecture on Kant; and Mr. Alcott, Dr. Bartol, Mr. F. B. Sanborn, Mrs. E. D. Cheney, and others will read papers or make addresses.

Personal.

A telegram from London announces the death of Arthur Penryhn Stanley, Dean of Westminster. Dr. Stanley was well known in this country, not only as an eminent divine, but as a leading writer and authority on ethics and theology.

John A. Appleton, of the firm of D. Appleton & Co., died on Wednesday, July 13, at his home in Clifton, Staten Island, N. Y., aged 64. He was the son of the founder of the publishing house of D. Appleton & Co.

Littre, the distinguished French linguist, is dead. He was born in 1801, and educated in medicine. He was made a member of the French Academy, and senator for life, in '75. He was a writer in history, philosophy, and poetry, and gave twenty-eight years to his greatest work, a dictionary of the French language.

LITERARY NOTES.

In *Harper* for August the leading articles are *The Surrender of Cornwallis*, by H. P. Johnson, with fifteen illustrations; *A Day in Africa*, (II.) by T. B. Aldrich, with six illustrations; *The White Mountains*, (III.) with sixteen illustrations; *The Various Languages of Billy Moon*, a story, by R. M. Johnston; *A Neglected Corner of Europe*, (III.) by Mrs. L. W. Champney, with fourteen illustrations; *President Madison and the Baptist Preacher*, by William Pope Dabney; *A Laodicean*, a novel, by Thomas Hardy.

St. Nicholas for August begins with a poem of Play-time by the editor, Mary Mapes Dodge, illustrated with a full-page drawing by Jessie McDermott, forming the frontispiece. Another poem by the editor, entitled *The Elf and the Spider*, appears some pages further on, with a dainty illustration by Mary Richardson.

Among the seven short stories are, *From Sandy Hook to the Light-shed, Under a Fly-wheel*, *How Miss Jenkins "Got Out of It,"* *School-story*, *How we Belled the Rat*, and *What Come of It*, by Lizzie W. Champney, illustrated by J. W. Champney.

Lippincott's Magazine for August contains *A Glimpse of the Cumberland Border*, illustrated; *The Home of the Giant Squid*, illustrated; *Craque-o'-Doom*, a story (concluded); *New Ground; Before the Dawn*; *Captain Put's Novel*; *Zoological Curiosities—Secretiveness*, by Felix L. Oswald, illustrated; *Flowers*; *On the Wrong River*; *New York's Fresh Air Fund*; *Santa Lucia*, a story; *The Pension Office*; *Going to Housekeeping in North Carolina*.

The Midsummer Holiday *Scribner* more than ever justifies its title, no less than six articles being directly adapted to the season, while three or four others pertain to topics of current interest.

In fiction we have the first half of the new story by the author of *An Earnest Trifler*; *The Daughter of Henry Sage Rittenhouse*; a three-part story, by Mr. Boyesen, with the piquant name of *Queen Titania*; *The Village Convict*, a short story of unusual force and feeling.

The illustrated articles are *The Isle of Peace*, by Susan Coolidge of Newport; *By the Sea in Normandy*, by Mary G. Loring; *A Little World*, by A. C. Redwood; *Ice-Yachting on the Hudson*; *Mr. Schuyler's Peter the Great*.

The Popular Science Monthly has for August *The Herring*, by Prof. T. H. Huxley, F. R. S.; *Physical Education*, by Felix L. Oswald, M. D.; *Recreation*; *The Blood and its Circulation*; *The Teachings of Modern Spectroscopy*; *Origin and History of Life Insurance*; *The Insufficient Use of Milk*; *Intelligence of Ants*; *Lunar Lore and Portraiture*; *The Visions of Sane Persons*; *School-room Ventilation*; *Origin and uses of Asphalt*; *The Unit in Plant Life*; *The Electric Storage of Energy*; *Sketch of Robert Wilhelm Bunsen*, with portrait.

The contents of the *Atlantic Monthly* for August are *Dr. Breen's Practice*, (I.-III.) by W. D. Howells; *French Life and Its Lessons*; *Corda Concordia* (read at the opening session of the Summer School of Philosophy, July 11th, 1881), by E. C. Stedman; *In Exile*, a story in two parts (part I.); *The New York Art Season*; *On the Acting of Iago*, by R. G. White; *The Portrait of a Lady*, by Henry James, Jr.; *Sleep's Threshold*; *The Indoor Pauper*, a study (II.).

The numbers of *The Living Age*, dated July 2nd and July 9th, contain articles on *Some National Characteristics of European Society*, *A Last Word on Disraeli*, and *Boycotted, Contemporary*; *Sir Henry Taylor on Carlyle's Reminiscences*, *Nineteenth Century*; *The Visions of Sane Persons*, *Fortnightly*; *Mattie*, *The History of an Evening*, *Blackwood*; *The Wit and Humor of Lord Beaconsfield*, and *The Revision of the New Testament*, *Macmillan*; *A Japanese Bride*, and *A Pilgrimage to Cyprus in 1395-96*, *Fraser*; *The Shut-up Houses*, *Argosy*; with an instalment of *The Frere's*, by Mrs. Alexander, and the usual amount of poetry.

A new volume began with the number for July 2nd.

BOOK NOTICE.

COMMON SEA-SHELLS OF CALIFORNIA. By Josiah Keep, A. M., Teacher of Natural Sciences in the High School of Alameda, Curator of Conchology in Academy of Sciences. Fully illustrated by numerous plates. San Francisco: Printed for the author by Upton Bros. 605 Sacramento Street. 1881.

This little volume is simply a brief introduction to the study of the common marine shells found on the Pacific coast between San Diego and Alaska. It describes about one hundred species, including the Chitons with the univalves and the bivalves. Almost everyone who visits the coast for recreation, is attracted by the shells found there. Many are satisfied when mere curiosity is satisfied; but some desire to know more of the pretty objects, to know their names, their habits, their food, etc. But the books that tell all these things are not convenient to carry about, or are too costly to buy, and thus most persons go without them, and without the knowledge. This alphabet of the subject fills a vacant space in shell literature, and doubtless will whet the appetite of not a few to seek further knowledge. The plates we have admired much. We were indeed surprised at our first glance at them that such clear, sharp, and correctly drawn cuts should be made in San Francisco for such a little treatise as this. We have been somewhat familiar with all the shells described here for years, having collected nearly all of them, and these cuts look like perfect portraits of our old friends. We knew them at sight. We are glad to see the book, and have read it with pleasure, and wonder that some of the half-dozen students of this subject, whom we have known here, have not written such a book before.

There are perhaps a dozen errors in the typography which we have marked. This will probably be corrected in another edition, which we trust will be called for. There should also be added a list of names in full of authors of descriptions of species, the abbreviations not being sufficiently clear to beginners.

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COMET *b*, 1881.

AT a recent meeting of the California Academy of Sciences, the president, Prof. Davidson, gave an account of his observations upon the comet *b*, 1881, and extended his remarks upon the physical conditions of comets in general.

It may be an item of interest to our readers to know that the observations in this city were made at the DAVIDSON OBSERVATORY, which has been built and outfitted at the expense of Prof. Davidson. The equatorial has an objective of six and one-third inches—made by Clark & Sons—and is mounted in a superior manner. The telescope has a battery of eight eye-pieces, magnifying to a power of five hundred diameters; a position-micrometer, and a direct prism star-spectroscope; a solar prism by which the observer gets rid of at least four-fifths of the rays of the sun, and thus does not risk the colored glasses in observing solar spots, etc. The governor is by Villerceau of Paris, and works beautifully. The mounting of the equatorial is generally upon the plan adopted by Cooke & Sons of York, England. The instrument is the same as exhibited at the Centennial by Fauth & Co. of Washington. Its outfit is being added to by Prof. Davidson, who has lately ordered a double-image micrometer from Clark & Sons.

The geographical position of the observatory is: latitude $37^{\circ} 47' 22''.2$ North; longitude $122^{\circ} 25' 41''$ West; and its elevation above the sea-level is 375 feet. It is therefore the most western observatory on the American continent.

The observations upon the comet *b* commenced June 24th, and were continued several weeks. They consisted of studies of the physical characteristics presented by the nucleus, envelopes, coma, and tail; and of the determination of the right ascension and north polar distance of the nucleus. We cannot reproduce the blackboard sketches which illustrated the account given by the speaker; but we may try to reproduce his verbal descriptions.

When first seen at this observatory, there was a general popular opinion that two comets existed: one visible in the northeast in the morning, and another visible in the northwest in the morning. This mistake was hardly pardonable, because any celestial object having a north polar distance greater than the latitude of the place will set west of north, and rise east of north. In this case the comet had a declination so small that it rose and set just as the sun rises and sets; but as the declination increased, the comet skimmed the northern horizon on June 25th, and did not set subsequently, because its north declination was increasing.

To the naked eye, the tail was about sixteen or seventeen degrees long, June 25th, with a breadth of three degrees at the widest part. At its lower transit, the eastern edge of the tail was a straight line pointing almost directly to the north star; the western edge being curved. The nucleus looked nearly as bright as a star of the third magnitude, but with a wholly different brilliancy: it lacked intensity.

In the telescope, the nucleus presented a disc-like appearance, fully as well defined as the planet Uranus, with which it was compared one evening. Its diameter was about six seconds of an arc.

Immediately from this nucleus sprang three broad beams of light, each pair sixty degrees apart, and fanning out towards the sun. When these beams had arrived at a certain distance from the nucleus, they spread out into a circular envelope or band, ill defined, but nevertheless deriving its brightness and form from these beams; thence curving on either side, it trailed away into the tail. Of course bright matter existed around the nucleus and between the brighter beams, and streamed away into the tail formation.

Outside the first envelope there was a second, whence the matter streamed into the tail; and beyond the second envelope was the coma, dying away to invisibility, but still retaining a circular form around the envelopes and nucleus.

Directly in the wake of the nucleus was a well-defined shadow, or rather an absence of bright matter. This indication was visible to several persons on two or three different nights. The western half of the tail, reckoning the comet at lower transit, was brighter than the eastern, in the telescope.

Upon a subsequent night, the three bright beams had disappeared, but a sector-beam appeared, projected nearly in the line toward the sun, and extended to about the same limit as the previous beams, where it spread out and formed the first envelope, which extended around the sun for half a circumference, and then stretched away into the tail. The second envelope also existed as before; and the coma, the so-called shadow, still existed.

Upon another night, there was projected from the nucleus a sector-beam

of light, shaped somewhat like the front of an old battle-ax, but not toward the sun. It was directed mainly at an angle of sixty degrees from the line toward the sun and toward the west. Its outer border formed part of the limit of the first envelope. There was no shadow to the nucleus; but there was a faint shadow under this great beam and the nucleus, the shadow extending out a short distance into the brightness of the tail. The second envelope was fainter than before, and the coma was decreasing in brightness and area. The western limit of the tail was yet the brighter.

It should be mentioned, that at the first the speaker especially called attention to the fact that there was no phase to the nucleus; in other words, that it was apparently self-luminous. Particular attention was drawn to this upon the earlier nights.

Upon another night the observer noticed a peculiar change in the developments from the nucleus. From the nucleus there appeared two beams of light upon the same diameter through the nucleus. These beams had the appearance of a tomahawk, the front extending as a sector, lying sixty degrees east of a line joining the nucleus and sun, and reaching the limit of the first envelope, which was in part developed from it. The other beam decreased in breadth as it left the region of the nucleus; but its extremity did not spread out and form part of the envelope.

This curious phenomenon was seen at eastern observatories, because it is shown in one of Prof. Draper's photographs.

The comet passed through these and numerous other changes, until the nucleus assumed a hazy, disc-like form, with no distinction of envelopes, but a coma which gradually decreased in diameter and in brightness.

Upon each evening, when the comet was bright, the observer examined it with a direct-vision star-spectroscope of limited power; not with the expectation of making any definite measurements, but of simply studying the more general appearances. He reported that a very faint spectrum extending from the red to the extreme blue was visible, but it was utterly impossible to say whether it was crossed by any solar lines. Upon this spectrum were superimposed three broad bands of light, not well defined, but upon two or more occasions fairly separated. That well into the blue there appeared upon two other occasions a bright band which never crossed the whole spectrum, but appeared only on one side. At times it flitted in and out as a bright speck, but upon one night was clearly made out.

In summing up the results of these physical observations, and of former experiments upon Coggia's comet and upon telescopic comets, the speaker said that the indications pointed distinctly to the comet's body being an incandescent body when near the sun; that it was in a constant state of change, just as a solar spot is changing; that the great beams and sectors of light from the nucleus seemed to reach a given limit, and then to spread into an envelope, whence the matter appeared to trail into the tail; that the positive proof of the tail being reflected solar light was yet wanting; but that there appeared a strong probability that the glowing gas around the nucleus was some compound or form of carbon.

He pointed out the incomprehensibility of the tail of a comet being matter projected from the nucleus, because it required that such matter at the extremity of the tails of the great comets of 1680 and 1843, whose bodies passed almost within touching distance of the sun's surface, should move through space with a velocity of 110,000 miles per second. Such a rate approaches the velocity of light; and he proposed at a future meeting to suggest a hypothesis which would account for the phenomenon.

Astronomers had acknowledged their inability to account for this apparent movement. Bessels had proposed a repulsive theory, which conflicted with all our knowledge of celestial mechanics and physics, and had no other example for its support. So far, this was the greatest mystery in astronomical science.

We understand that during Prof. Davidson's observations he invited many of his friends to examine the comet and other celestial objects of interest, etc.

GRUBE'S METHOD.*

BY PROF. LOUIS SOLDAN.

[Principal of the St. Louis Normal School.]

ARTICLE 1.

“EVERY text-book of primary arithmetic professes to teach the numbers in some way or other,” says Grube; “but to know a number really means to know also its most simple relations to those numbers, at least, which are smaller than it.” Any child, however, who knows a number and its relations, must be also able to perform the operations of adding, subtracting, etc., for they are nothing but the expression of the relation in which one number stands to others. Each example shows what must be added to or subtracted from a number to raise it or lower it to equality with another; or, as in multiplication and division, it sets forth the multiple relation of two numbers. The four processes are the direct result of comparing, or “measuring,” as Grube calls it, two numbers with each other. Only when the child can perform all these operations, for instance, within the limits of 2, can it be supposed really to have a perfect knowledge of this number. So Grube takes up one number after the other, and compares it with the preceding ones in all imaginable ways, by means of addition, subtraction, multiplication, and division. This comparing or “measuring” takes place always on external, visible objects, so that the pupil can see the objects, the numbers of which he has to compare with each other. The adherents of this method claim for it that it is based on a sound philosophical theory, and that it has proved superior in practice to the methods in use before its invention.

* From “Two Essays on Elementary Instruction in Arithmetic.” 44 pp. Price 40 cts. Published by Vaile & Winchell, Chicago.

Some of the most important principles of this method of instruction are given by Grube in the following:

"1. (Language.) We cannot impress too much upon the teacher's mind that each lesson in arithmetic must be a lesson in language at the same time. This requirement is indispensable with our method. As the pupil in the primary grade should be generally held to answer in complete sentences, loud, distinctly, and with clear articulation, so especially in arithmetic, the teacher has to insist on fluency, smoothness, and neatness of expression, and should lay special stress upon the *process* of solution of each example. As long as the language for the number is not perfect, the idea of the number is defective as well. An example is not finished when the result has been found, but when it has been solved in a proper way. Language is the only test by which the teacher can ascertain whether the pupils have perfectly mastered any step or not.

"2. (Questions.) Teachers should avoid asking too many questions. Such questions, moreover, as, by containing half the answer, prompt the scholar, should be omitted. The scholar must speak himself as much as possible.

"3. (Class and Individual Recitation.) In order to animate the lesson, answers should be given alternately by the scholars individually, and by the class in concert. The typical numerical diagrams (which, in the following, will continually re-appear) are especially fit to be recited in concert.

"4. (Illustrations.) Every process and each example should be illustrated by means of objects. Fingers, lines, or any other objects will answer the purpose, but objects of some kind must always be presented to the class.

"5. (Comparing and Measuring.) The operation at each new stage consists in comparing or measuring each new number with the preceding ones. Since this measuring can take place either in relation to difference (arithmetical ratio), or in relation to quotient (geometrical ratio), it will be found to comprise the first four rules. A comparison of two numbers can only take place by means of one of the four processes. This comparison of two numbers, illustrated by objects, should be followed by exercises in the rapid solving of problems and a view of the numerical relations of the numbers just treated, in more difficult combinations. The latter offer a good test as to whether the results of the examination of the arithmetical relations of the number treated, have been converted into ideas by a process of mental assimilation. In connection with this, a sufficient number of examples in applied numbers are given to show that applied numbers hold the same relation to each other that pure numbers do.

"6. (Writing of Figures.) On the neatness in writing the figures the requisite time must be spent. Since an invariable diagram for each number will reappear in all stages of this course of instruction, the pupils will soon become able to prepare the work for each coming number by writing its diagram on their slates."

It will appear from this that Mr. Grube subjects each number to the following process:

I. Exercises on the pure number, always using objects for illustration.

a. Measuring (comparing) the number with each of the preceding ones, commencing with 1, in regard to addition, multiplication, subtraction, and division, each number being compared by all these processes before the next number is taken up for comparison. For instance, 6 is first compared with 1 by means of addition, multiplication, subtraction, and division,

$$(1+1+\text{etc.}=6; 6 \times 1=6; 6-1-1, \text{ etc.}=1; 6 \div 1=6,)$$

then with 2, then with 3, and so forth.

b. Practice in solving the foregoing examples rapidly.

c. Finding and solving combinations of the foregoing examples.

II. Exercises on examples with applied numbers.

In the following, Mr. Grube gives but the outline, the skeleton as it were, of his method, trusting that the teacher will supply the rest. The sign of division, as will be explained below, should be read at the beginning, "From ... I can take away ... — times." By this way of reading, the connection between subtraction and division become evident.

FIRST STEP.—*The Number One.*

"As arithmetic consists in reciprocal 'measuring' (comparing), it cannot commence with the number 1, as there is nothing to measure it with, except itself as the absolute measure."

I. The abstract (pure) number.

One finger, one line; one is once one. The scholars learn to write:

$$\begin{array}{r} | \qquad \qquad 1 \\ | \qquad \qquad 1 \times 1 = 1 \end{array}$$

II. The applied number.

What is to be found *once* in the room, at home, on the human body?

SECOND STEP.—*The Number Two.*

I. The pure number.

a. Measuring (comparing).

$$\begin{array}{r} | \qquad \qquad 1 \qquad \qquad | \qquad \qquad 2. \\ | \qquad \qquad 1 \qquad \left\{ \begin{array}{l} 1+1=2. \\ 2 \times 1=2. \\ 2-1=1. \\ 2 \div 1=2. \end{array} \right. \end{array} \quad \text{(Read: From 2 I can take away 1 twice.)}$$

2 is 1 more than 1. 1 is 1 less than 2. 2 is the double of 1, or twice 1. 1 is $\frac{1}{2}$ of 2.

b. Practice in solving examples rapidly.

$$1+1=? \quad 2-1=? \quad 2 \div 1=? \quad 1+1-1 \times 2=? \text{ etc.}$$

c. Combinations. What number is contained twice in 2? 2 is the double of what number? Of what number is 1 one-half? Which number must I double to get 2? I know a number that has in it 1 more than 1. Which is it? What number have I to add to 1 in order to get 2?

II. Applied numbers.

Fred had 2 dimes, and bought cherries for 1 dime. How many dimes had he left?

A slate-pencil costs 1 cent. How much will 2 slate-pencils cost?

Charles had a marble, and his sister had twice as many. How many did she have? How many one-cent stamps can you buy for 2 cents?

THIRD STEP.—*The Number Three.*

I. The pure number.

a. Measuring.

(1) By 1.

	1	{	$1 + 1 + 1 = 3.$
	1		$3 \times 1 = 3.$
	1		$3 - 1 - 1 = 1.$ (Better than $3 - 1 - 1 - 1 = 0.$)
	1		$3 \div 1 = 3.$

$\text{for } 3 - 1 = 2, 2 - 1 = 1.$

This ought to be read: From 3 I can take away 1 3 times, or, in 3, 1 is contained 3 times. The ideas of "to be taken away" and "to be contained" must always precede the higher and more difficult conception of dividing.

(2) Measuring by 2.

		{	$2 + 1 = 3, 1 + 2 = 3.$
			$1 \times 2 + 1 = 3.$
			$3 - 2 = 1, 3 - 1 = 2.$
			$3 \div 2 = 1$ (1 remainder).

(From 3 I can take away 2 once, and 1 will remain; or, in 3, 2 is contained once and 1 over.)

3 is 1 more than 2, 3 is 2 more than 1. 2 is 1 less than 3, 2 is 1 more than 1. 1 is 2 less than 3, 1 is 1 less than 2. 3 is 3 times 1. 1 is the third part of 3. 1 and 1 are equal numbers; 1 and 2, as well as 2 and 3, are unequal.

Of what equal or what unequal numbers does 3 consist, therefore? etc.

b. Practice in solving examples rapidly.

How many are $3 - 1 - 1 + 2$ divided by 1?

$1 + 1 + 1 - 2 + 1 + 1 - 2 + 1 + 1?$ $3 \times 1 - 2 \times 1 + 1?$ $1 - 2 + 1 + 1?$ etc.

The answers must be given immediately.

No mistakes can arise as to the meaning of these examples; the question whether $3 + 1 - 2$ means $(3 \times 1) - 2$ or $3 \times (1 - 2)$ is answered by the fact that these examples represent oral work, and that it is supposed that the operation indicated by the first two numbers (3×1) is completed mentally before the next number is given.

c. Combinations.

From what number can you take twice 1 and still keep 1? What number is 3 times 1? I put down a number once, and again, and again once, and get 3; what number did I put down 3 times?

II. Applied numbers.

How many cents must you have to buy a three-cent stamp?

Annie had to get a pound of tea for 2 dollars. Her mother gave her 3 dollars. How much money must Annie bring back?

Charles read 1 line in his primer; his sister read 2 lines more than he did. How many lines did she read?

If 1 slate-pencil costs 1 cent, how much will 3 slate-pencils cost?

Bertha found in her garden 3 violets, and took them to her parents. How can she divide them between her father and mother?

FOURTH STEP.—*The Number Four.*

I. The pure number.

a. Measuring.

(1) By 1.

	1	{	$1 + 1 + 1 + 1 = 4$ ($1 + 1 = 2, 2 + 1 = 3, 3 + 1 = 4$).
	1		$4 \times 1 = 4.$
	1		$4 - 1 - 1 - 1 = 1.$
	1		$4 \div 1 = 4.$

(2) Measuring by 2.

$$\begin{array}{l|l|l} 1 & 1 & 2 \\ 1 & 1 & 2 \end{array} \quad \left\{ \begin{array}{l} 2+2=4. \\ 2 \times 2=4. \\ 4-2=2. \\ 4 \div 2=2. \end{array} \right.$$

(3) Measuring by 3.

$$\begin{array}{l|l|l|l} 1 & 1 & 1 & 3 \\ 1 & & & 1 \end{array} \quad \left\{ \begin{array}{l} 3+1=4, 1+3=4. \\ 1 \times 3+1=4. \\ 4-3=1, 4-1=3. \\ 4 \div 3=1 \text{ (1 remainder).} \end{array} \right.$$

(In 4, 3 is contained once and 1 over; or from 4 I can take away 3 once, and 1 remains.)

Name animals with 4 legs, and with 2 legs. Wagons and vehicles with 1 wheel, 2, and 4 wheels. Compare them. 4 is 1 more than 3, 2 more than 2, 3 more than 1. 3 is 1 less than 4, 1 more than 2, 2 more than 1. 2 is 2 less than 4, 1 less than 3, 1 more than 1. 1 is 3 less than 4, 2 less than 3, 1 less than 2. 4 is 4 times 1, twice 2. 1 is the fourth part of 4, 2 one-half of 4. Of what equal and unequal numbers can we form the number 4.

b. Problems for rapid solution.

$$2 \times 2 - 3 + 2 \times 1 - 1 - 2 + 2 ?$$

$$4 - 1 - 1 + 1 + 1 - 3, \text{ how many less than 4? etc.}$$

c. Combinations.

What number must I double to get 4? Four is twice what number? Of what number is 2 one-half? Of what number is 1 the fourth part? What number can be taken twice from 4? What number is 3 more than 1? How much have I to add to the half of 4 to get 4? Half of 4 is how many times 1 less than 3? etc.

II. Applied numbers.

Caroline had 6 pinks in her flower-pot, which she neglected very much. For this reason, one day one of the flowers had withered, the second day another, and the following day one more. How many flowers did Caroline keep?

How many dollars are $2+2$ dollars? 3 apples and 1 apple?

$$4 \text{ quarts} = 1 \text{ gallon.}$$

Annie bought a gallon of milk, how many quarts did she have? She paid 1 dime for the quart, how many dimes did she pay for the gallon?

$$4 \left\{ \begin{array}{l} . \text{ quart,} \\ . \text{ quart,} \\ . \text{ quart,} \\ . \text{ quart,} \end{array} \right. \quad 4 \left\{ \begin{array}{l} | \text{ dime.} \\ | \text{ dime.} \\ | \text{ dime.} \\ | \text{ dime.} \end{array} \right.$$

What part of 1 gallon is 1 quart? If 1 quart costs 2 dimes, can you get a gallon for 4 dimes? A cook used a gallon of milk in 4 days. How much did she use each day.

The recitations should be made interesting and animated by frequently varying the mode of illustration; and in this the ingenuity of the teacher and her inventive power can display themselves to their best advantage. It is, of course, superfluous to describe the infinite variety of subjects which may be used, but a few suggestions will perhaps prove acceptable. Those illustrations which compel the whole class to be active, or which are of special interest, and arouse the attention of pupils, are of greater value than others. For instance, "Class, raise two fingers of your right hand; two fingers of your left hand. How many fingers have you raised? Two fingers and two fingers are how

many? Two and two are how many? Carrie may show to the class with her fingers that two and two are four." This plan of illustrating should be used very frequently, as it requires the whole class to be active. . The following illustration is also commendable, as it hardly ever fails to enlist the interest of the class; every pupil likes to be allowed to illustrate a problem in this way: "From four I can take away two how many times? Emma may show that her answer is correct by making some of the other girls stand. (The class know that those whom Emma teaches must stand until she makes them take their seats again.) Emma: Four little girls are standing here. From 4 little girls I take 2 little girls once, (making two of the four take their seats) twice, (making the other two sit down). From 4 little girls I can take away 2 little girls twice. From 4 I can take two away twice. $4 \div 2 = 2$."

VALUE OF THE STUDY OF ENGLISH IN OUR SCHOOLS.*

BY PROF. THOMAS R. PRICE,
[Of the Normal School of Virginia.]

THE other day I tried to set before you the importance of language teaching in general to the growth of the mind; and I tried to show that, from the conditions of human life, the only teaching of language that can effect the great masses of our countrymen is the teaching of the English language. From this I went on to argue, that the method of teaching the English language in our schools, is that point of school-method which it is most needful for us to understand. To-day I wish to go further. I wish, as a teacher of language, to prove to you that in itself the teaching of the English language is more fruitful of good, more rich in results for our pupils, than the teaching of any foreign language. Of all that can be taught in our schools, the teaching of the mother tongue leads most surely and most swiftly to the increase both of mental power and of useful knowledge.

In the first place, let me recall to your minds the old adage: All true education is the leading on of the mind from the known to the unknown. For every fresh advance in knowledge we require a foundation of knowledge already there to build upon. In arithmetic, for example, we lead a child on from the addition and subtraction of concrete things, of marbles or of apples, to the addition of abstract numbers, and to the conception of mathematical relations. In geography, likewise, from the observation of the hills and streams and fields that surround the school-house, things the child knows by his senses, we lead him on into knowledge of the rivers and mountains that define his

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county and his State; on still to the great facts and principles of physical and political geography. Now in all teaching, the greater the mass of known facts, the more rapid and the more certain is this passage of the mind from the known to the unknown. The more we know already of any subject, the easier to know still more. Now in learning a foreign language, in Latin, for example, there is in the child's mind no mass of known facts to build upon. Everything is strange. Every word has to be secured, word after word, by successive efforts of memory. And hundreds of words have thus to be painfully acquired before the laws of syntax can be understood, and the meaning of even simple sentences made clear. But in beginning the school study of English, even for the most ignorant child that uses English as mother tongue, the mass of known facts is already right large. The child has the practical knowledge of many hundred words, the practical command of innumerable constructions. He can understand, more or less, what is said to him in English. He has power, more or less, to put his own thoughts into English. Thus, when the time of study begins, the mass of known facts is greater for the child in English than anywhere else; thus the rate of progress from the known to the unknown is more rapid; thus the rewards of study are more ample. Within a year from his starting-point, an English-speaking student of English, is ready to grapple with difficulties of language that he could not reach in three or four years of Latin study; and a few years of such work upon English will give him such a mastery over his own language as a lifetime of learned labor would not give him over Latin. The old philosopher said that, if you gave him a fulcrum, he could move the world with his lever. Now in foreign languages, you have to make your fulcrum before you can use your lever, but in English the fulcrum is there for use, and the lever all ready for skillful hands. Again, the swiftness and solidity of progress in any branch are in direct proportion to the time and to the means of study. Of all branches of physical science, for example, it has been proved that the most useful and the easiest is botany. The plant-world lies all around us. So soon as we have learned the elements of the science and mastered the first principles of classification, our powers of observation are excited, and are strengthened by the examples of plant-form that surrounds us. Every word becomes an object-lesson, every walk is a course of botanical instruction. Now in the study of language, all the weight of this advantage is on the English side. In the foreign language, the task done by the child in school is apt to be all that he does. He drops the subject from his mind at the close of one lesson; he does not pick it up until he begins to prepare another. In the long vacation, the Latin grammar and Cæsar grow dusty from disuse; and the dust and cobwebs gather, too, not less thickly in his brain. He does not hear Latin spoken in his home, he does not play in Latin nor talk in Latin. The very books that have the Latin in them are few and costly. The foreign language remains something outside of himself, something strange and outlandish; his mind works upon it at long intervals, feebly and slowly. But, in the study of the mother tongue, all the influences that surround the child's life conspire to make every lesson fruitful. The new word learned from a book in the morning, that very after-

noon is trotted out proudly into talk. The blunder that has been corrected in him, he is keen to correct in others. The new fact that is gained, the new construction that is mastered, the new principle that is seized—all these are things of direct and frequent application. The sign, the picture-book, and the newspaper are always tempting him to read. The talk that he hears, even by its very mistakes, widens and solidifies the principles that he has learned. When once he has seized the laws of grammar, he enjoys his new power of expressing his thought with correctness, and he is proud of rising superior to his old mistakes. There is hardly an hour in the day when interest and observation are not awake in the young student's mind upon the facts of the language. All the forces and the chances of his intellectual life become the helpful ministers to his progress.

Thus the study of the English language is more rapid and more fruitful than any other study, because the means of studying it are more numerous and the time given to it ampler.

Thirdly, the progress made in any study is in direct proportion to the student's zeal and willingness. Even for the best of us, whether children or what Charles Kingsley calls grown-ups, the sense of duty can never act so mightily as the sense of pleasure.

"The labor we delight in physics pain."

No man succeeds permanently in doing anything well that he dislikes to do; even in mature life, the innermost secret of professional success is to bring one's love and one's work into accord; to do as one's profession the work that one loves best to do. But with children this law of mind is even stronger than with us. When a child sees the direct advantage of any study, when his desire of excelling in it is once aroused, the progress of his mind is easy and rapid. What teacher has not marveled at his dull boy's quickness in mastering all the mysteries, in learning all the laws, of base-ball?

Where, on the contrary, the advantage of the study is dimly seen, and remote to the child, and where his desire of excellence is faint, his mind is dull, and his advance is slow. So with most boys in Latin; they do not see what it means; they do not feel how it will make them better off; they must work at it for years before they feel the strength of mind and the glow of soul that the speech of Rome bestows. But under wise teaching, the study of the English language is, for every English-speaking child, full of living interests; the desire of excelling in the use of that language, as a means of personal power and distinction, is the strongest of school motives. By this I do not mean that repulsive study of English grammar which has had so sad an effect in making the study of English hateful to so many mistaught generations. But to learn the meaning and the history of his own words, to learn how to read well and to write well, to avoid the blunders of speech that betray ignorance and vulgarity, to acquire the habits of speech that mark the well-bred and the educated—these are objects of study that arouse the keenest desire of the young. To have such knowledge is, they see, the surest way of opening the world to their ambition; to leave school devoid of such knowledge is, they see, to doom themselves for-

ever to insignificance and contumely. Thus, in my own experience, I have seen countless young men that could not be either driven or led into giving faithful study to Latin or Greek, turn with eager desire and with persevering zeal to the study of English. I have seen the study of English spread like a contagion through all the grades of undergraduate life, till even the idlest and the feeblest were moved to labor for an object that even the dullest could appreciate as desirable.

Thus I have come to know that nearly all minds are more easily aroused to hearty and willing study of the English language than to any other form of study at all. This, then, is the third advantage that the English has over all foreign languages in education; it acts more powerfully upon the mind because of the greater desire that children feel to acquire it, because of the greater need they feel to understand it and to use it. Teach your classes English with zeal, and you will find your scholars respond with enthusiasm, and go forward with incomparable swiftness.

Once more, the study of English is better than any other form of language study in the kind and degree of intellectual exercise that it gives. All study of language, as we have seen, calls into healthy exercise the three great faculties of the mind—the faculties of observation, memory, and reasoning. But in studying a foreign language, say Latin, the chief strain for the first years, at least, is the strain upon the memory. Thousands of words have to be acquired by sheer force of memory; thousands of difficult inflections have to be learned by heart. Not till countless separate facts have been separately mastered by the memory, is the material there for the practice, on a large scale, of scientific observation or of scientific reasoning. But in studying English, there is a healthier distribution of brain-work. The work done by the memory, although always great and healthful, is from the first subordinate to the work done by observation of facts and by process of reasoning.

Take, for example, the elementary process of learning the parts of speech, a process that I have always found to be at once the most important and the most difficult for the child mind to perform. In Latin, each part of speech is marked by its external form. It is to be recognized by external marks, by mere force of memory, without any exercise of reasoning power at all; c. g.—

Bona sperant homines.

The verb and the noun, the subject and the object, each is indicated, labeled as it were, for the child's eye by its external form. But in English—

Men hope for good—

no word bears any such label. "Hope" may be either noun or verb. "Good" may be either noun or adjective. "Men" may be either nominative or objective. There is no help for either the eye or the memory. The whole strain is thrown upon the reason. The understanding of the sentence is a purely intellectual exercise in discriminating between the logical functions of words. So in going up from the lower to the higher stages of the study, the

exercise of memory is never, indeed, allowed to slacken, but it is always kept subordinate to the exercise of reason. In syntax, for example, the mind, instead of watching the external concord between endings—*Senatus Populusque Romanus*—has to watch the internal concords of meaning. Instead of relying upon memory, it has to make every step by logical thought. Thus to omit all other advantages that English has over other forms of language study, we may close this part by saying :

The study of English is better for our children's minds than the study of other languages, because, while it exercises memory, observation, and reasoning—all three—it exercises reason, and trains the logical faculty sooner and sharper than the others. That is, it brings the highest power of the mind soonest into action, and drills it by the most persistent drill.

A METHOD OF TEACHING ADVANCED READING.

BY GEO. A. RICHARDSON,
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ARTICLE No. I.

SEVERAL years' observation and experience in the public schools of this State have convinced me that more negligence is shown by teachers in giving instruction to advanced classes in reading than in any other branch of study. Many teachers succeed admirably in teaching primary reading; yet they often fail in developing the understanding of pupils after they have reached such work as is usually given in one of our ordinary Fifth Readers.

Pupils read too frequently without any tone or inflection that indicates an understanding of what is before them. Usually the tone of the voice is dry and monotonous, plainly showing that the pupil regards the reading matter as a list of words to be pronounced more or less carefully, but not having any special meaning attached to them. When children read in this way, they either do not understand what they read, or else their minds are passive as to the meaning while they utter the sounds, their attention being confined to the pronunciation of the words in their lesson. To break up this habit, we should first see that the child has a fair comprehension of what he reads, and then require him to keep the meaning in view when he utters the words.

With the hope that the method I have followed for some time in teaching may afford some hints to those teachers who believe that the proper study of reading involves something more than a mere parrot-like repetition of words, I here present an outline of the work done on a selection from one of our school readers, by a class in the school I teach. Several recitations are heard on each selection from the book. The exact number depends on the diffi-

culty of the piece, the ability of the class, and the time that can be allowed to a single recitation. Each pupil should have a copy of a small dictionary, and the school library ought to contain the Unabridged Dictionary, a good cyclopedia, and a large atlas.

In many schools these will not all be found, but where they are not, the most important work can be done with the dictionary alone. The first recitation is devoted to the study of articulation and pronunciation. Not much attention is paid to faulty emphasis and inflection, except when due to carelessness. It is best to do one thing at a time, and the reader will be confused if required to observe the emphasis before he has mastered the pronunciation.

In the second recitation, it is expected that the pupil will obtain a fair knowledge of the meaning of such words and expressions as are new to him, and the ability to use most of them in sentences of his own composition. Definitions in the dictionary should be examined; but the teacher should be careful not to mistake the memorizing and repetition of definitions for the explanation of the meaning and use of a word. Definitions as given in our dictionaries are often more difficult for a child to comprehend than the words they define. Pupils should be told to examine the definition, to compare the use of the word in the lesson with its definition; but not to memorize the definition unless they understand it. Such work is a waste of time. Children should be encouraged to explain the meaning of terms "as though they were telling younger children"; and at first an explanation should be accepted, no matter how crude the language, if it shows that the child understands the use of the term explained. By and by, when the children have more confidence and skill, their language may be improved by a judicious criticism; but care should be exercised not to discourage them in their first efforts, when the work is new to them. Continual practice in the use of words should be kept up by requiring members of the class to compose sentences containing them. Where the sentences are awkwardly built, the teacher should call for better ones, and if these cannot be supplied by the class, he should supply them himself. This kind of work is very important, as no one can be said to understand a word without being able to use it, and the use of a word is most readily learned by hearing or seeing it used.

As soon as the pupils have finished their work on the use of the words in the lesson, they should be required to read it again, for the purpose of securing correct emphasis. If the children have been properly drilled in their primary work in reading, and have mastered the meaning of the words and combination of words in their lesson, but little difficulty will be met with in securing natural reading. A wise teacher will not expect much elocutionary power, and if he does expect it, he will not find it in children; but he should expect to find intelligent and intelligible reading—reading that will neither put the listener asleep, nor cause him to wish for the time being that he had been born deaf.

The next work done should be in writing. Reading and writing should go hand in hand throughout the entire school work. Errors in the use of words are more easily corrected, and the proper use more liable to be remembered,

in a written exercise than in an oral one. It would seem at first as though this work belonged not to reading, but to grammar. Teachers will remember, however, that it is all a drill on the use of words in the lesson intended to give the child a clear understanding of the language, so that he may comprehend the thoughts of the writer, and correctly render them when he reads. This comprehension of the reading matter must be given in some way: if not by the method I speak of, then by some other. In order to illustrate the method, I will here quote a short lesson, with an outline of the work done upon it by a class in my school:

"THE CHARGE OF THE LIGHT BRIGADE.

"The whole brigade scarcely made one effective regiment, according to the numbers of continental armies; and yet it was more than we could spare. As they rushed toward the front, the Russians opened on them from the guns in the redoubt on the right, with volleys of musketry and rifles. They swept proudly past, glittering in the morning sun in all the pride and splendor of war.

"We could scarcely believe the evidence of our senses. Surely that handful of men are not going to charge an army in position!

"Alas! it was but too true. Their desperate valor knew no bounds, and far indeed was it removed from its so-called better part, discretion.

"They advanced in two lines, quickening their pace as they closed toward the enemy.

"A more fearful spectacle was never witnessed than by those who beheld these heroes rushing to the arms of death. At the distance of twelve hundred yards the whole line of the enemy belched forth from thirty iron mouths a flood of smoke and flame, through which hissed the deadly balls. Their flight was marked by instant gaps in our ranks, by dead men and horses, by steeds flying wounded or riderless across the plain.

"The first line is broken; it is joined by the second; they never halt or check their speed an instant. With diminished ranks—thinned by those guns which the Russians had laid with the most deadly accuracy—with a halo of flashing steel above their heads, and with a cheer which was many a noble fellow's death-cry, they flew into the smoke of the batteries; but ere they were lost from view the plain was strewn with their bodies and with the carcasses of horses.

"They were exposed to an oblique fire from the batteries on the hills on both sides, as well as to a direct fire of musketry. Through the clouds of smoke we could see their sabers flashing as they rode up to the guns and dashed between them, cutting down the gunners as they stood.

"To our delight, we saw them returning, after breaking through a column of Russian infantry, and scattering them like chaff, when the flank-fire of the battery on the hill swept them down, scattered and broken as they were.

"Wounded men and dismounted troopers flying toward us told the sad tale. Demigods could not have done what they had failed to do.

"At the very moment when they were about to retreat an enormous mass of lancers were hurled on their flank. Colonel Shewell of the Eighth Hussars saw the danger, and rode his few men straight at them, cutting his way through with fearful loss. The other regiments turned and engaged in the fearful encounter. With courage too great almost for credence they were breaking their way through the columns that enveloped them, when there took place an act of atrocity without parallel in the modern warfare of civilized nations.

"The Russian gunners, when the storm of cavalry passed, returned to their guns. They saw their own cavalry mingled with the troopers, who

had just ridden over them; and, to the eternal disgrace of the Russian name, the miscreants poured a murderous volley of grape and canister on the mass of struggling men and horses, mingling friend and foe in one common ruin. It was as much as our heavy cavalry brigade could do to cover the retreat of the miserable remnants of the band of heroes as they returned to the place they had so lately quitted. At thirty-five minutes past eleven, not a British soldier, except the dead and dying, was left in front of the Russian guns."

RECITATION FIRST.

Directions to pupils.—Study carefully the pronunciation of each word in the lesson, using the dictionary where there is any uncertainty. Spell by sound the following words: Russians, surely, wounded, accuracy, ere, carcasses, oblique, column, Hussars, cavalry. Copy the same words, divide them into syllables, and mark the pronunciation with the proper diacritical signs. Draw lines through silent letters; and where two letters represent a single sound, connect them by a curve. Spell these words in a different way, so as to indicate the sound—colonel, surely, oblique, iron, view, fire, columns, nations.

RECITATION SECOND.

Directions to pupils.—Explain as though to a younger child the meaning of the following words and phrases: Brigade, regiment, effective, continental armies, redoubt, volleys of musketry, evidence of our senses, desperate valor, discretion, ranks, deadly accuracy, halo of flashing steel, batteries, oblique fire, sabers, column, infantry, flank-fire, demigods, retreat, enormous, lancers, Eighth Hussars, credence, atrocity, without parallel, modern warfare, civilized nations, cavalry, eternal, miscreants, grape and canister, cover the retreat, remnants.

RECITATION THIRD.

Directions to pupils.—Read the lesson, paying close attention to the sense, and make your voice give the meaning as well as the words of what you read. At the close, tell in a few words what the lesson is about, what the British cavalry did, and what happened to them.

RECITATION FOURTH.

Directions to pupils.—Select twenty words from the lesson, and write sentences containing each word. Sentences containing words of no difficulty will not be accepted, and each sentence must indicate the meaning of the word it contains. Write a brief essay on "Armies and Battles." Finally, write a question addressed to your teacher about some part of the lesson that you do not thoroughly understand.

During the first recitation a constant watch should be kept by the teacher for faulty articulation. The class should be drilled in concert, and separately on combinations of words that are not rendered distinctly.

In the next recitation many questions like the following should be asked: What is the difference between an army and a brigade? a regiment and a company? a general, a colonel, and a captain? a cannon and a mortar? a musket

and a rifle? What is the difference between marching in rank and marching in file? between cavalry, infantry, and artillery? How large are some cannons? how large a ball do they throw? and how far can it be thrown? What are cannon-balls made of? what are bombshells like? and when are grape-shots used? What did soldiers fight with a long time ago? What is the opposite of modern? of foe? of front? of courage? of civilized? Mention three civilized nations; three barbarous nations. What is Russian derived from? British? difference between English and British? How large are armies sometimes? Find on the map the part of the world where this engagement took place.

The character of these questions should depend on the age and general intelligence of the pupils. Time should not be wasted by asking questions that bring out no new ideas; and, on the other hand, the questions should not be on subjects that are in any way beyond the child's comprehension. The whole work should be planned so as to lead the children on to a clear comprehension of the force of language and the beauties of thought, without discouraging them by great difficulties in any one place.

Every question should be confined to the lesson, or to something intimately connected with it. One subject leads to so many others that a teacher is liable to wander from the work in hand. It should be remembered that the main object of the drill is to enable the pupil to understand the lesson before him, and not to understand everything remotely connected with it. Many other questions besides those I give might be asked, and definitions of other words given. I have merely selected a portion. The written exercises should be carefully corrected by the teacher, errors pointed out, and the faulty work rewritten by the pupil. Requiring the pupils to prepare questions about the lesson has a good effect in leading them to examine it in search of puzzling expressions. The next thing to understanding a sentence is to know what part of it is not understood.

THE STUDY OF ENGLISH.

[Extract from the Inaugural Address delivered at the Installation of PRESIDENT W. T. REID, University of California.]

BUT the neglect of provision for the study of English in English-speaking communities is, perhaps, more remarkable than anything else connected with modern education. Most college courses seemed framed upon the idea, either that students already have a sufficient knowledge of English to make further special study time ill-spent, or that we have little worth reading in our own tongue. It can hardly be necessary to discuss either supposition. It is, however, a very interesting, and I hope that it will be an instructive, fact, that in the Harvard preliminary examinations of 1878, 33 per cent. of the students examined were conditioned in Latin, 30 per cent. in Greek, and 34 per cent. in English.

In 1879, 24 per cent. were conditioned in Latin, 33 per cent. in Greek, and 53 per cent. in English. In 1880, 25 per cent were conditioned in Latin, 25 per cent. in Greek, and 34 per cent. in English. These facts carry with them their own conclusions, and are hardly surprising, when you consider how little time is given to the study of English in our preparatory schools. Nor can it be surprising, in the light of our courses of study, that hardly one public speaker in a thousand talks for fifteen consecutive minutes without violating the rules of grammar, and hardly one college graduate in a hundred talks for the same length of time without making like mistakes. These mistakes may be trifling, and doubtless often are comparatively so, and they would be excusable if we could feel that the time necessary to their avoidance, and now given to other subjects, was spent with some adequate advantage.

It must not be understood that I make this indictment against our University in particular. On the contrary, our literary course is one of the best with which I am acquainted, from a purely literary point of view. I say from a purely literary point of view, because I object as much to an education purely literary as to one purely scientific or purely classical. It seems to me a reproach of which we should take immediate steps to rid ourselves, that college graduates leave us with such an imperfect knowledge of English; for it is not their fault, but ours.

I would begin to rectify the mistake by adopting as a requirement that which was offered as a suggestion in the late *University Bulletin*. I would not suggest merely that it would be "profitable and interesting" to read certain books. I would require students to come to us ready to write an essay of not less than two pages of foolscap, in good English, and correctly punctuated and paragraphed, on a subject selected from any one of several named books; and I would make this examination one of the most important admission examinations. Further, I would see English bear such an important relation to the other studies in every department of the University, that it would be impossible for a student to graduate who could not express himself at least with clearness, conciseness, and accuracy—points necessary to all, and especially to the student of science; indeed, accuracy is a necessity, and may be reached by most; elegance is a gift or an accomplishment, and may in some measure be left to take care of itself. And in securing this most valuable result, I would make a careful study of our masterpieces the chief medium, so that all graduates should leave us not only with the ability to write and speak correctly, but with a generous acquaintance with the whole field of our English literature.

THE heavens are as deep as our aspirations are high.—*Thoreau*.

THE mission of art is to represent nature, not to imitate her.—*W. M. Hunt*.

BREVITY is the soul of wit, and tediousness the limbs and outward flourishes.—*Shakspeare*.

THE TALE OF A COMET.

BY C. P. CRANCH.

O RED-TUFTED stranger !
 O starry-space ranger !
 Say now—is there danger
 Approaching with thee ?
 Is there much of a risk in
 Thy train in its whisking,
 Young star-dragon frisking
 So jocund and free ?

Say where, through the spaces
 No star-gazer traces,
 Thou hast run thy long races
 In deserts apart ?
 Though bearded and hairy,
 Thou 'rt light as a fairy ;
 All gassy and airy,
 Some say that thou art.

Though old superstition
 Once haunted our vision,
 And death and perdition
 Were shook from thy hair,
 We now, with reliance
 On figures and science,
 May look with defiance
 On thee and thy glare.

To sin and to error
 You were once a sky-terror,
 An awful great kero-
 sene splendor afar.

But now since Leverrier,
 We a skye-terrier
 Name you, a merrier
 Sort of Dog-star.

You may frisk through creation
 And court observation,
 And the cannibal nation
 With fear be appalled ;
 You may drop from the summit
 Of space like a plummet,
 But you cannot quite come it,
 Though Comet you're called.

Perhaps, in your ermine
 Of gas, you determine
 To sweep off the vermin
 That bother the times ;
 A reformer—a new man—
 With purpose quite human,
 Like the sky-sweeping woman
 Of nursery rhymes.

Though daily and nightly
 You are burning more brightly,
 The earth will dodge lightly
 The whack of your flail.
 Like a train on a car-track
 You 'll speed on your far track,
 And never your star-track
 Repeat your bright tale.

—*The Parisian.*

NEW MODE OF FORCING PLANTS.

TO Dr. C. W. Siemens of London, the celebrated electrician, we are indebted for a series of experiments, lately tried by him, on the effect of the dynamo-electric light in promoting the vegetation and the growth of plants. The idea that the electric currents might be utilized in this way first occurred to him by observing that the blistering effect on the skin from the lights was very similar to that produced by a hot sun. Without the aid of the sun's rays chlorophyl is not formed, and this is an all important element in vegetable life, as it produces the green color of the leaves, and supplies the plants with carbon and starch for forming woody tissues, causing the decomposition of the car-

bonic acid vapor absorbed from the atmosphere by the leaf. The electric light, being in fact a sun on a small scale, has been found to produce chlorophyll and other necessary chemical changes in a similar way to solar rays. The apparatus employed for the series of experiments was a small upright Siemens machine, worked by a gas-engine. The two carbons in the regulator lamp were respectively 10 and 12 millimetres diameter, and the light it produced was equal to 1400 candles. The first plan that was tried was by placing the lamp about 7 ft. above a melon frame, and a reflection was arranged to concentrate all the lights on the sash. Pots of rapidly growing plants were in succession brought under this influence ; some were exposed only to the electric light, some to the sun alone, and some to the sun and electric lights alternately. These latter made the most rapid progress, and were the best in color.

In the next experiment, the lamp was fixed inside a greenhouse, and as near the roof as possible. Various plants were placed in pots on the floor at a variety of distances, and the light was kept burning all night for one week. The plants nearest to the influence of the lamp made the most rapid progress, and the foliage and flowers were of a far brighter hue than if they had only sunlight during the day. As regards forcing fruit, the electric light seems very efficacious. In ten days time, some strawberry plants, which had been kept alternately under the influence of the sun and light, had large full-flavored fruit ; while plants which have been exposed to the rays of the sun for a similar period had merely green berries on them. There is no doubt that the use of artificial sun-light in horticulture will be of immense advantage ; but whether it can be applied by market-gardeners, and people supplying the markets, entirely depends on the price at which it can be produced. The machine employed by Dr. Siemens, of 1400 candle-lights, costs about ten cents an hour to work, exclusive of a man, but including the cost of carbons. Dr. Siemens is of opinion that a light equal to 6,000 candles would prove to be economical in working. This would have to be fixed 20 ft. above the ground.

For forcing early fruits and flowers for market, this discovery, if not too expensive, will be invaluable, as the rays may be concentrated on a brick wall, and by this means fruit may be rapidly ripened. At a lecture at the Royal Institution, London, given by Dr. Siemens, the action of the dynamo-electric light was tried on some tulips, and had the effect of causing the buds to expand, in about twenty minutes' time, from small buds to full-blown flowers.

The dynamo-electric machine will doubtless soon be applied to purposes of general utility, as it enables work on a heavy scale to be carried out ; and it is already, even for telegraph work, superseding the voltaic battery. Should Dr. Siemens succeed in producing it in a cheap form, it would without doubt be largely adopted by horticulturists, as the advantages of being early in the markets are well known. It appears to be an almost undisputed fact, that plants subjected to the influence of the dynamo-electric light arrive at perfection in little more than half the time they would have taken if left only to the rays of the sun. The plants subjected to the lengthy experiments of Dr. Siemens had the electric-dynamo light turned on about six in the evening to six in the morning, when it was replaced by daylight.—*Progress of Science.*

OUR GREAT HOME.

BY KATE L. BROWN, WAKEFIELD.

[Lessons Preparatory to the Study of Elementary Geography.]

CONSIDER the known; teach from what the children see about them.
Lead from the known to the unknown.

Aids.—Natural objects, pictures, stories.

I. The Great Round Ball on which we live.

It is half-past three of a bright spring afternoon. The pupils in Helen Russell's school have been busy with a long exercise in dictation. So little eyes are tired, and the hands, that have begun to grow weary from holding the pencil, relax their grasp very readily at the signal for laying aside work. It is a winsome flock—thirty girls and boys brimful of life and intelligence, with a ready appreciation of all that is good and helpful. Here are blue eyes and black eyes, fair curly heads and dark braids. Here is Harold the thinker, Lulu the fly-away, Mabel the sturdy matter-of-fact child, and France the romancer. Here is also the boy who can't keep still, and the girl who finds it hard to keep a sober face. Just a lovable, sometimes trying, yet ever an appreciative little band, ready for anything new either in work or play. When all are quiet and attentive, Miss Russell says: "You may look out of the window, children, and tell me what you can see." Very soon the hands begin to flutter up. "Harold may tell."

Harold.—I see a field across from the school-yard. The river runs through it, and just beyond is Chestnut Hill, where Lulu lives.

Lulu's little hand has been waving to an fro, keeping time with her flossy curls. At the word, she flies up from her seat, anxious to tell what she sees. "I see the river and the place where the willow brook flows into it, and down ever so far is the sea."

T.—Good, Lulu! you have used your eyes well. Do you see more, Daisy?

Daisy.—I see some pine woods, and clear way off is something like a cloud. Papa says that it is a mountain.

Just then Mabel raises her hand eagerly. "Oh! I see a little bit of blue water where they have been trimming off the trees; it must be Lily Pond."

Miss Russell writes at the children's dictation:

Fields,
Woods,
River,

Brook,
Mountain,
Pond.

T.—How many of you have ever been on the top of Chestnut Hill? Do you see anything different from what you have seen here?

Wilfred.—Why, we can see the city, and everything else we have spoken of.

T.—If we start and go toward the pine grove, shall we see anything like what we have seen here.

Mollie.—We can see the river, and more fields and hills.

T.—Did any of you ever go anywhere where you could not see fields, woods, hills, and water, as you looked out?

France.—Why, there are fields and woods and hills near every place where I've ever been.

T.—If you should go many miles, you would still see things very much like what you see here, only sometimes much more beautiful. And everywhere we go, we find homes, and people working, and little children having a good time. Only all the homes are not alike. This world where we live is one big home, and all the people in it are brothers and sisters, because God is the father of every one. Now, would it not be nice to learn something about these brothers and sisters of ours, and this home, only a part of which we know now? Many of you have homes with names to them. Lulu's home is "Hill-top House"; Vivian's "Cosey Corner," because it nestles cosily under the hill; and Ralph's summer home at Magnolia is "Cliff Cottage." This big home of ours has a name; does any one know it?

Fanny.—I heard Isabel studying her geography to-day in the library; and I heard her say something about the "earth as the home of man."

T.—That is just what I want. We live on the earth, and we want to learn all we can about it. We want to know what kind of a looking thing the earth is; and first, what form it has. What kind of a body is this (holding up a wooden ball)?

"Spherical body," say the children, who have become quite familiar with its name and qualities, through their daily lessons in form.

T.—I will tell you something which will surprise some of you. Our earth is a spherical body, too.

Edith.—Why, teacher, it looks flat.

"Yes! I know; but there is a reason for that. Our earth is so big that we can only see a little portion of it at a time. Edith, how does the space between my two fingers look on this ball?"

Edith.—It looks flat, almost.

T.—Just so the little portion of space on the earth that we can see at once looks flat. But our earth is not the only spherical body. I am thinking of one we see in the night, sometimes.

"The moon! The moon!" burst out the eager children. "The sun is a spherical body," says Bertram. "Last night, as it set, it looked like a big red ball in the west."

T.—Yes, and there are many other spherical bodies moving around in the air. You will learn about some of them when you are a little older. This wonderful ball on which we live is not alike in all places; some of you must know that already. France, tell us about your old home in Canada.

France.—It is very cold in winter. We have great, great snow-storms that last for days, and then everybody is drifted in. Papa says that up farther north it is colder still; and in some places it is cold all the year through.

T.—In the place France last spoke of, we find snow and ice all the year round—no grass, no flowers or trees—nothing but cold, with snow and blue ice. How is it down in Florida—Alice, do you remember?

Alice.—Oh, yes; I was only five when we went there. I know that it was very hot, and that we picked and ate oranges just as we do apples here. There were lots of alligators in the rivers; they looked like logs of old, dried wood, when they were perfectly still.

T.—In some places we find high mountains. Some of you have been to the White Mountains and know just how a mountainous country looks. In some places there is nothing but sand, just as far as the eye can reach. All these places are very wonderful, and we want to know something about them. But first, we want to know about what is right around us. How many of you would like to take a walk with me after school, and see what we can find?

How the hands fly up! In a short time the company set out.—*Primary Teacher.*

SPELLING.

BY J. FRAISE RICHARD.

ONE of the most important exercises of our schools is spelling, if properly conducted. Some radical changes, however, need to be introduced to make it practical and interesting. In the following sketch I present an outline of what I sometimes teach in our Training Class of the Normal College.

I. Definition: The giving, in their proper order, of the sounds or letters of a word.

II. Kinds:

1 *a.* Oral.

1 *b.* Phonic.

2 *b.* Literal.

2 *a.* Written.

1 *b.* Ideographic.

2 *b.* Literal.

1 *c.* Ordinary.

2 *c.* Phonetic.

III. Sources from which material is to be obtained:

1. Words found in usual reading lessons.
2. Words found in different subjects taught in school.
3. Names of days of week, months, seasons, etc.
4. Names of persons, states, cities, rivers, etc.
5. Names of objects found in school-room.
6. Names of objects purchased in a grocery, drug-store, book-store, etc.

7. Words beginning with a certain letter.
 8. Words containing a certain number of syllables.
 9. Words to be pluralized.
 10. Words in possessive case.
 11. Words illustrating abbreviations, contractions.
 12. Words similar in pronunciation, but different in orthography.
 13. Words found in letters, reports, essays, and classifications of pupils.
 14. Words and phrases used in popular quotations.
 15. Lists taken from spelling-book.
- IV. Principles:
1. The major portion of spelling in schools should be written.
 2. Spelling lists should be properly corrected, graded, and preserved.
 3. The use of diacritical marks should be practically inculcated in all grades of schools.
 4. The use of the spelling-book in primary classes is unphilosophical, and should be discouraged.
 5. Pupils must be taught to *think*. Spelling is not a meaningless repetition of letters and syllables.
 6. *General Rule.*—No word or phase is properly spelled until all that is required has been done; that is, until the i's have been dotted, the t's crossed, the proper letters capitalized, and the diacritical, abbreviation, contraction, possessive, quotation, and other marks placed.—*The Normal Teacher*.

EDITORIAL DEPARTMENT.

OVEREDUCATING THE MASSES.

THERE is no charge more frequently reiterated than that the common school tends to "overeducate the masses." So respectable an authority as Dr. J. G. Holland, even, has lent the weight of his authority to this view. Now, what are the facts?

Our opportunities in San Francisco for testing the assertion, for forming a correct judgment, are exceptionally favorable. A genial climate, cheap food, a liberal-hearted, open-handed people, all tempt to idle boyhood and shiftless manhood. So our California boys have added the word "hoodlum" to the English tongue.

But who are these frequenters of street-corners? these wharf-rats? these loungers at theater-fronts, or standing advertisements for free-lunch saloons?

We have investigated the subject, and ascertained who they are not. We find no graduates of our high schools among them; no university or college students

are there; but few boys who have completed the course of study of the grammar schools have been discovered. Thousands of idle boys? Of course there are. Scores of them seek constantly for employment. But our high-school boys, our university graduates and undergraduates get it. We find them in the stores and factories, at the desk and behind the counter, running errands and sweeping offices, doing honest work in every department of labor. No, not every department. We do not find them working on streets and highways; they do not build railroads, nor dig away our sand-hills; and we are glad of it. Not that such labor is not as ennobling as any other; but let the steam-paddy do the work of the machine, and let our boys do the work which calls into active exercise some brain as well as some muscle.

Who, then, are the idle boys?

They are those who do *not* go to the public schools. They are those who have outgrown parental control, even from early infancy. They are sent to school, but go when they please. They get "tired of school," and leave in the fifth grade; i. e., before the grammar school is ever reached. In fact, they form the class that never fully, or in any considerable degree, comes within public-school influence and under its peculiar training.

If our many theorists will study this subject at first-hand, they will learn, not that the schools overeducate the masses, but merely another confirmation of the old adage, that "A *little* learning is a dangerous thing."

WHAT OUR TEACHERS NEED.

SUCH practical articles as Mr. Richardson's on "A Method of Teaching Advanced Reading," in this number of the JOURNAL, are always very acceptable. They are precisely what we want and need. Who next? We trust our best teachers, those who have new methods to vary the round of daily work, will impart some of their plans to their co-laborers.

The individual who drones through her work in the same fashion year in and year out is no teacher. She is a treadmill, and woe to the hapless children who are compelled to keep up with her weary, soul-destroying grind. So it is new methods we want, little contrivances to brighten the eye and fix the attention.

But with all methods, let not the teacher forget that the former can never be a substitute for the latter; that the most important part of any subject is the *ideas* children have about it: in a word, that education is not the pouring in of facts, but the development of power.

With this digression, we repeat, articles on teaching, on school organization or management, are earnestly solicited. We cannot always publish these immediately on receipt. We have had some accepted articles on hand for nine months, waiting a suitable time for publication, while others have appeared immediately. This is the custom with all magazines, (inevitable on account of the necessity for variety of contents) and will explain the apparent delay in the publication of some excellent essays.

WE want the address of EUOTE. It has been lost or misplaced.

EDUCATIONAL MEETINGS EAST.

STATE TEACHERS' ASSOCIATIONS have held sessions during July and August in some of the New England and Western States, and also in New York. These meetings were all characterized by valuable lectures and much interest. Among the papers read before the New York teachers was one on "Educational Journalism," by C. W. Bardeen, editor of the *School Bulletin*, published at Syracuse in that State. Mr. Bardeen, while thoroughly an educator, is withal really one of the best editorial writers in the United States. The *School Bulletin* is distinguished for its vivacity, and is always eminently readable.

The most prominent event of the summer was undoubtedly the annual meeting of the National Educational Association at Atlanta, Georgia.

The following pungent comments from the August *School Bulletin* will interest our readers:

The number in attendance fell below expectations. Superintendent Orr, of Georgia, at Chautauqua, last year, urged the Association to meet at the "Gate City," and receive the greetings of four to six hundred teachers. Many of the "six hundred" were busy elsewhere, so didn't respond. Financially, the National will have to make up losses in a more fertile soil. The Southern welcome was hearty, and the work of the association quite up to the average. There were the usual rambling remarks that form the spice and weakness of a public convention.

The nationality of the programme was somewhat centralized, Ohio and Indiana furnishing a large part of the regular ammunition, and a liberal supply of educational fireworks.

The teachers of the South are not lacking in ability; and culture, organization, discussion, and professional spirit will help them as it has helped others. The Southern appetite for education is good,—especially that of our "brother in black," who didn't enroll and come down with the two dollars, as doubtless he thought the meeting wasn't for him.

Among the brethren of the North were President Smart, to the Southerner a live Yankee in form, style, and speech; Secretary Henkle, who can outdo the Puritan fathers in appearance of devotion; President Tappan of Ohio, a college public-school man; President Andrews of the same State, whose interest in associated effort has run through many years; Superintendent Tarbell of Indianapolis, a successful manager, a gentleman without peculiarities; Superintendent Rickoff, as read by a Southern educator, a veteran in the cause, but not a success in firing himself off; sharp, pleasant, cultured Jerome Allen, fresh from his Saratoga laurels; Danforth, who does the most and suffers the most on no salary of any officer of the association; (This is an out-of-New-York view of Mr. Danforth. Most of us think he manages to get pretty good pay for his services.—ED. BUL.) Superintendent Calkins, who acts for the great metropolis, New York, at home and abroad; Wickersham, who has grown young and no less devoted since he became an "Ex"; Superintendent Doud of Toledo, who appears to be one of the coming men of the office-holding State; Superintendent Peaslee of Cincinnati, who was taken for a Methodist minister on account of his stiff hat and the pulpit style of his reading; President White of Indiana, whose presence at an educational meeting is a blessing; William T. Harris, "the philosopher and friend" of education; Principal Morey of Rhode Island, who can tell a story with point and finish, and manage the American Institute acceptably; Bicknell of Boston, who has a sharp eye for "Education" and his other minor educational publications; and General Eaton, who travels around with pleasant advice and a long evening address.

The programme had too many legs, and in trying to give each a chance, things became somewhat tangled. President Morey said he had but twelve topics on his programme, while the National started off with over thirty. It may prove a mistake that at the Cleveland meeting the association was divided into departments. At Chautauqua, a "Council of Education" was organized. It may prove a success, but at present it is plain that the educational camel is overloaded with "sections" and "departments."

Saratoga, next year!

The principal addresses, after a welcome by Gov. Colquitt of Georgia, and replies by Pres. J. H. Smart of Indiana, Dr. Wickersham of Pennsylvania, and Dr.

E. E. White of Indiana, were "On the Value of Schools," J. H. Smart; "Lines of Advance," Principal C. C. Rounds, State Normal School, Maine; "What Shall We Teach?" Supt. A. J. Rickoff of Cleveland, Ohio; "Education and the Building of the State," by Gen. Eaton, U. S. Commissioner of Education; "Some Essentials in the Development of a School System," by State Supt. D. F. DeWolf of Ohio; "The Teacher's Work," by Ass't Supt. N. A. Calkins of New York City; "Revision of the Common School Curriculum," State Supt. M. A. Newell of Maryland; "The Kindergarten System," by Mrs. Louise Pollock of Washington, D. C. Dr. Wickersham read a paper on "The Leading Characteristics of American Systems of Education"; Supt. J. B. Peaslee of Cincinnati read one on "Moral and Literary Training"; Principal Louis Soldan of the St. Louis Normal Schools, on "The Century and the School." These are but a few of the able addresses read at this meeting.

Among the resolutions presented through the Hon. Thomas W. Bicknell, editor of *Education* and of the *New England Journal of Education*, etc., were the following, which we reprint as of interest to teachers on the Pacific, equally with the profession elsewhere:

UNIVERSAL EDUCATION.

Resolved, That it is eminently proper for this body to place upon record our firm, settled conviction of the value and the necessity of universal education.

Resolved, That the education of the children of all classes of the people in every State is essential and vital to the prosperity of our republican institutions; and that it is the province and duty of each State to provide a full and thorough course of elementary instruction, at least, in free public schools, for every child within its borders.

NORMAL SCHOOLS.

Resolved, That in every complete system of education by the State, the normal school for training teachers should constitute an integral part; and we congratulate ourselves that in so many States such schools have been already firmly established, earnestly urging upon all others the necessity and the great importance of providing these institutions at the very earliest practicable day.

FREE SCHOOLS IN THE SOUTH.

Resolved, That this Association has witnessed with great satisfaction the establishment and growth of free-school system in the Southern States, and the success which has followed the work is an evidence of the earnest purpose of the workers, and the wisdom of their methods. The present meeting has afforded the members abundant opportunities to note the zeal and enthusiasm of Southern educators, and it is the pleasure of the Association to congratulate the people of the South on what has been already done in securing the growth of free schools, and to express the hope that the day is fast coming when every child shall receive a good common-school education.

EDUCATIONAL JOURNALS.

Resolved, That the educational literature of a country is one of the most valuable agencies for the quickening of educational thought, and the elevation of public opinion, and that it is very desirable that all who claim to have a part in the work of education should possess and read not only the standard works on pedagogics published in our own and other countries, but that they should also read and discuss the fresh utterances of the press as found in educational papers and periodicals, which are now issued in weekly, monthly, and bi-monthly editions.

The officers for the ensuing year (Counselors, *i. e.*, Executive Committee excepted) are: President, G. J. Orr of Georgia; Secretary, W. D. Henkle of Ohio; Treasurer, H. S. Tarbell of Indiana; Vice-Presidents, W. T. Harris of Missouri, T. H. C. Vance of Kentucky, E. K. Foster of Florida, W. O. Rogers of Louisiana, M. A. Newell of Maryland, J. M. Fish of Arkansas, H. S. Jones of Pennsylvania, Hugh S. Thompson of South Carolina, J. L. Pickard of Iowa, J. B. Peaslee of Ohio, J. W. Dickinson of Massachusetts, Jerome Allen of New York; Counselors at large, Gen. John Eaton of Washington, D. C., J. H. Smart of Indiana.

The Journal for September appears more promptly on time than for some months past. Next month, we trust to have it in the hands of its readers by the 1st.

STATE UNIVERSITY MATTERS.

THE installation of Prof. W. T. Reid into the presidency of the University took place with appropriate ceremonies at Berkeley on the 23rd of August. It was an occasion long to be remembered. At the suggestion of the State Superintendent, the high schools of San Francisco and several other cities had been closed; thus their teachers and pupils were enabled to attend these exercises. Large numbers of college-bred men within reach of Berkeley, scores of the most prominent citizens of the State, the Governor, and the Board of Regents, (excepting three or four very conspicuous by reason of their absence) crowded the spacious auditorium, and left no room, even on the stage. The interest of the occasion was increased by the formal transfer of the Bacon Art Building, together with its magnificent collection of works of art, to the Regents, by the donor, Henry Douglas Bacon.

The deep hush of expectant attention greeted the opening sentences of Pres. Reid's inaugural, and until the last words fell from his lips, he maintained the interest of his address.

It was evidently not intended as a great paper or a finished essay; but it demonstrated in every subdivision of his subject, in every sentence, that the new President grasped the whole situation; that his mind is broad and comprehensive enough to take in at one broad sweep all the social conditions of this community and their bearings on the State University.

The main points in the President's address were the relation of the common schools and high schools of the State to the University; the necessity for developing to the highest extent the instruction in English; and the kind of university possible in and suitable for the conditions peculiar to the civilization of these Pacific Coast States.

On another page of the JOURNAL will be found a brief selection from his remarks on the necessity for more thorough instruction in English. It was in his argument on the kind of university suitable for this period of our growth that Pres. Reid showed himself at once the deep thinker and courageous advocate of opinions well considered. He rose here not merely to the height of his position as President of the University, but as a man talented and powerful enough to lift that University up to his own level.

TO SUPERINTENDENTS.

WILL superintendents oblige us by hurrying along the lists of the newly elected clerks of their boards of district trustees? Lists from but twenty-seven counties have come in. We are still compelled in the other counties to send to last year's clerks. The greatest possible care is now taken in mailing the JOURNAL; we are anxious that in this, as well as in all other regards, not the slightest ground for complaint may exist. The newly elected clerks can get all back numbers either from the former clerk or at the local post-office, addressed to that personage.

We hope to be notified promptly of any failure or delay in receiving the JOURNAL. If trustees will send us a list of numbers due them since July, 1880, and not received, we will, *where possible*, supply them with the missing copies.

LANGUAGE TEACHING.

IT is now almost universally conceded that the time spent below the high schools in teaching technical grammar is time absolutely wasted. This learning of definitions, this parsing and analyzing, have no results commensurate with the time and pains expended. Many of our best teachers have seen this for years; have put it in print; have proved it at Teachers' Institutes. Why, then, do we keep on in the same ruts? Why not teach our pupils to speak by speaking; to write by writing? Why not apply that common-sense axiom, that the way to do a thing is to go ahead and do it? For three reasons:

1st. It is more work than the old way; and teachers are (like other folks) sometimes—very rarely—a little lazy. It is so much easier to open the grammar and “hear the definitions,” or to read, and “let the class parse or analyze,” than to teach children to make and correct sentences; to get up a discussion on a stated topic, or to write a brief description of a simple object.

2nd. Because teachers have not been trained to use any complete system of language teaching distinct from the technical grammar; nor indeed are they generally aware that there is such a system, simple, logical, well-graded in successive steps from the lowest to the highest class of the common school.

3rd. The country naturally looks for leadership to the great centers of population. In this State, at least, the metropolis does not furnish a pattern of a well-balanced school course efficiently carried out. Indeed, nowhere is the failure in the art of written and oral expression more marked, the result more lamentable, than in this city.

It hardly requires our own observation to show this. The fact is practically conceded in the report of the deputy superintendent (included in the superintendent's report for 1880). The deputy there deplores the insufficient results; gives examples of the total inability of advanced pupils to express themselves in plain, correct English, and makes some excellent suggestions.

This is all. We are not aware that anything has been done with these suggestions; that any reforms are contemplated in our present miscalled system of language teaching, or that the next report will prove more encouraging.

If the present administration has any system for the supervision of the schools, for the improvement of the course of study, for bringing about more satisfactory results in language teaching, would it not be well to develop it; to let the teachers of the Coast and of the Union know what it is; so that, if good, it may benefit the whole country?

COUNTY INSTITUTES.

IF superintendents will send us brief accounts of their annual Institutes, we shall be glad to publish them in the JOURNAL.

Our space in the Editorial and Official Department has lately been so limited that we were obliged to omit notices of the San Luis Obispo, Siskiyou, and El Dorado Institute, though had a brief report from each been sent us, it would have found place. The San Luis Institute, of which we personally know, was one long

to be remembered, both for the personnel of the teachers and for their interest and enthusiasm in the week's work. Their superintendent, Mr. Beckett, is one of the best men for his place in the State. When the time comes, we trust teachers will forget all petty differences, abandon political predilections, and throw the whole weight of their united influence in his favor.

Though it is some time since we saw Mr. Markham, and still longer since we visited Mr. Morse's section, we doubt not that, as they are men of Mr. Beckett's stamp, their localities will show the same marks of efficient supervision as San Luis Obispo.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, EDITOR.

COUNTY BOARDS AND STATE DIPLOMAS.—Concerning Educational and Life Diplomas, it may unquestionably be assumed that all will agree upon the following propositions, to wit:

1. That the diplomas should be entirely reliable as to what they certify; viz., that the holders are distinguished by good scholarship, and have been *successful* teachers for at least five or ten years, as the case may be.

2. That to this end, the possibility of incompetent or unworthy persons obtaining the original certificates upon which their diplomas may afterwards be applied for, should be kept at a minimum; and that this may be most effectually accomplished by local boards maintaining a high and sensible standard in examinations, guarding vigilantly against fraud on the part of applicants, and on their own part against the temptations of fear, favor, good-nature, or easy carelessness in the mode of conducting the examinations and crediting the papers.

3. That in voting recommendations to the State Board upon certificates heretofore issued, the same vigilance, firm adherence to duty, and unyielding disregard of all considerations and influences other than the genuine merit of the applicant, should be exercised by all local boards.

4. That, while securing all of the foregoing, there should, on the other hand, be created no unnecessary, and certainly no insurmountable, obstacles, to hedge out the competent and worthy applicants from receiving the honorable recognition of hard study and faithful, efficient work, which these diplomas are designed to convey.

5. And finally, that these diplomas should pass current, and be recognized and honored by all local boards; the veterans who hold them being thus relieved from the annoyance and humiliation of all future examinations, and the younger teachers stimulated to attain to excellence in their profession by a desire to obtain them.

So far as I am informed, the policy concerning these diplomas, as thus briefly stated, governs in all local boards, and all are honestly striving to carry out that policy. The only failure that has come to my notice has been in regard to what is stated above as No. 4. This has been quite unintentional; and, in the absence of legislative enactment, can be readily corrected by uniform action upon a plan to be mutually agreed upon by county boards of education. The following com-

munications to the State Board from two counties widely separated, viz., Humboldt and Sonoma, will serve to illustrate several cases already before us, and to show that many others must arise:

"At a meeting of the Board of Education of Humboldt County, held on the 11th, Mr. E. H. Kraft asked the recommendation of the board to your honorable body for an Educational Diploma on a first-grade county certificate of Sonoma County. In consequence of a rule adopted in previous cases of a similar kind, we could not recommend him upon a certificate of another county. I therefore deem it but just to Mr. Kraft to testify to his success while teaching in this county during the short time that he has been among us, and to his worth as a gentleman.

"JAMES B. BROWN,

"President of Board of Education of Humboldt County."

"Mr. E. H. Kraft is the holder of a first-grade Sonoma County certificate. He taught in this county three years, and was uniformly successful. I consider him one of our very best teachers. He has been teaching for a year in Humboldt County, and as our rules do not allow us to recommend a person who has been teaching out of the county for six months, he cannot get a formal recommendation from our board. The rules of the Humboldt County Board do not allow them to recommend a person who did not receive the certificate upon which the recommendation is asked in that county.

"Between the two counties, Mr. Kraft finds himself without the support of either. If anything can be done by the State Board, by which he will receive his Life Diploma, it will be a favor most worthily bestowed.

"Mr. Kraft has taught ten years, and has invariably left his schools with the respect and esteem of all reputable people.

"C. S. SMYTH,

"Supt. of Schools of Sonoma County."

The State Board finds itself powerless in the matter, by reason of subd. 10th and 11th of sec. 1521, which requires that "all applications for diplomas must be accompanied by a certified copy of a resolution adopted by a local or county board of education, recommending that the same be granted.

A similar case has occurred on account of the rules adopted by the Santa Barbara and the San Luis Obispo County Boards. A teacher in the latter county could not be recommended by *that* county board, as it had adopted a rule to vote recommendations upon certificates which had been granted in that county only. The teacher had received his certificate in Santa Barbara County, and had taught there three years before going to San Luis Obispo County; but could not be recommended there, because *that* board had adopted a rule not to recommend any one who is not at the time a teacher in the county. Other cases could be cited, but these are sufficient to demonstrate that some uniform rule should be adopted.

The State Superintendent invites correspondence upon the subject, with suggestions as to the best course to pursue. In the mean time, the following is submitted for consideration. Objections may exist which do not at this moment present themselves, and it is therefore submitted for criticism also. It is suggested that county boards adopt the following:

In the matter of recommendations to the State Board of Education for Educational and Life Diplomas, the Board of Education of ——— County will be governed by the following rules:

1. No recommendation will be voted upon a county certificate, unless such certificate was issued in this county.

2. To be recommended upon certificates of this county, it shall be necessary for those who at the time are teaching in another county, to be indorsed to this board, as worthy and successful, by the board of education of the county or counties in which the applicant has taught since leaving this county.

3. Recommendations upon State certificates will be issued to those only who are teachers in this county.

It is believed that these three brief rules will meet the case; and if so, it will be gratifying to learn that they are being generally adopted. Should this be done, county boards will be furnished from this office with blank forms for indorsing to other county boards applicants for diplomas, something like the following, perhaps:

OFFICE OF SUPERINTENDENT OF SCHOOLS, ———— 188 .

To the Hon. Board of Education of ———— County :

GENTLEMEN—At a meeting of the Board of Education of ———— County, held ————, 188 , the following preamble and resolutions were adopted:

WHEREAS, ————, who has been teaching in this county for ———— years, is about applying to the Board of Education of ———— County, to be recommended for a diploma upon a certificate granted in that county; now, therefore, be it

Resolved, That ———— be and ———— is hereby indorsed by this board, as having been a successful teacher, and in every way worthy, during the whole time that ———— has taught in this county.

Attest:

—————, Superintendent of Schools.

Though the subject has no doubt been as fully elaborated as is really necessary at this time, it may be as well to add a word or two in conclusion, by way of anticipating objections to the proposed rules, which may possibly present themselves at first sight; as, for example, that they impose too much trouble upon both applicants and boards; that they suggest too plainly the operations of the "circumlocution office"—involve too much "red tape," etc. On the contrary, it is confidently believed that, upon careful consideration, they will be found to be very simple in their operation. That they will, moreover, prove acceptable to worthy applicants for State honors, because, (1) they will make it always possible for such to receive their diplomas, whereas, as has already been shown, it is now sometimes impossible. (2) They will afford such applicants abundant opportunity not only to prove their worth, but also to have it made a matter of official record in the books of the several counties in which they may have labored. (3) They will give to such teachers additional protection against the competition of those who, by reason of successive failures, frequently change from one county to another. (4) They will tend to give additional value to State Diplomas, and thus operate to raise the standard of the profession in our State.

It is as confidently believed that they will be acceptable to county boards of education, because (1) they will relieve such boards from being called upon to recommend to the State Board those who may indeed have received certificates in their respective counties, and may have taught there, but of whose subsequent career in other counties, for years it may be, they have no official or satisfactory knowledge. (2) They will also relieve boards from the applications of those who, having received certificates, and having taught elsewhere, have come more or less recently into their respective counties.

MEETING OF THE STATE BOARD—DIPLOMAS ISSUED.—At a special meeting of the State Board of Education, held at Sacramento on Saturday, August 20th, 1880, Life Diplomas were issued to the following parties:

Wm. G. McKean, Contra Costa Co.	Mary F. Smith, San Fran. City and Co.
James D. Collins, Fresno Co.	Margery C. Robertson, “
Benj. A. Hawkins, “	Mrs. Helen V. Shipley, “
Grace Morley, “	Harriet F. Stevens, “
Mrs. Belle Townsend, Lake Co.	Clara Wheaton, “
James E. S. Bell, Los Angeles Co.	Anne M. Prescott, “
J. Newton Burgess, “	Mrs. May A. Clark, San Joaquin Co.
John P. McNamer, “	Mrs. Helen A. Morgan, “
Geo. W. Howard, “	Francis W. Conrad, Santa Barbara Co.
Ed. T. Adamson, Mendocino Co.	Sarah A. Winchester, “
Rollo S. Clason, “	Mrs. Edith R. Edwards, Santa Clara Co.
Eliz. N. Fowler, “	E. L. Ruggs, “
Mrs. M. E. P. McCowan, “	Frederick C. Norton, Sonoma Co.
Mrs. Maomi B. Kerr, Oakland City.	Lizzie Yates, “
Ed. C. Humphrey, Sacramento Co.	Emlyn S. Walter, Solano Co.
Mrs. Clara Walton, “	S. L. Ward, San Diego Co.
H. P. McKusick, San Bernardino Co.	Seth H. Bond, Tulare Co.
Clara A. Adams, San Fran. City and Co.	Wm. Loyd, “
Mary L. Greer, “	Lide G. Ayers, Yolo Co.
Almeda S. Harrington, “	Mrs. Sue E. Grant, “
Mrs. Edwin O. Rieser “	

Educational Diplomas were issued as follows to—

Mrs. Martha E. White, Alameda Co.	Belinda Roper, San Francisco Co.
Mrs. Julia C. Bevan, Amador Co.	Ida R. Mallory, “
Mrs. Sabra S. Brite, Contra Costa Co.	Quinette O. McConnell, “
Hiram W. Mathews, “	Marie J. Johnson, “
Dora B. Reis, Faymonville, Fresno Co.	Bertha Goldsmith, “
Emma M. Garretson, “	Grace H. Perry, “
Addie C. Shepard, “	Pauline Raphael, “
Frank W. Clyborne, Humboldt Co.	Mrs. H. M. Solomons, “
LeRoy Brown, “	Mrs. Cora Bailey, San Joaquin Co.
Marg't L. Ashe, Kern Co.	John Coats, San Luis Obispo Co.
Wm. H. Bingaman, Monterey Co.	Benj. H. Franklin, “
George E. Graves, “	Emma F. Robinson, Santa Barbara Co.
Mrs. Hanna Scott Turner, “	Lucy R. Shepard, “
Joseph Edwards, Mendocino Co.	Nannie W. Teaford, Santa Clara Co.
Mary D. McClure, “	Susie J. Cadwell, Shasta Co.
Mrs. Belle Young, “	Byron B. Fenton, “
Lucie L. Gober, Nevada Co.	Leon Leighton, “
Maggie Bixbie, Sacramento Co.	Judson Regal, “
Jennie H. Dickie, “	William Acton, Sonoma Co.
Mollie Graham, “	Agnes Conlan, “
Nina Funston, Sacramento City	Alice Gates, “
Lizzie M. Griffin, “	Hannah E. Stone, “
Lizzie M. Bernard, “	Mary G. Stone, “
Clara Orth, “	Ira L. Grainger, Stanislaus Co.
Nora H. Butterfield, “	Zacharias F. Wharton, Sutter Co.

Mrs. Martha M. Ross, Sacramento City.	Isora Vickers, Tehama Co.
Mrs. Libbie Booth, San Benito Co.	Joanna M. Boland, S. F. City and Co.
Annie E. Thomasson, “	Marianne Bonnard, “
Kate McDonnell, San Bernardino Co.	Alice M. Root, Tuolumne Co.
Emma Townley, San Diego Co.	Richmond P. Merrill, Tulare Co.
Mrs. Elizabeth M. Bacon, “	Jane Gilmer, “
Josie Thyres, San Francisco Co.	Alice V. Paine, Yuba Co.

The next meeting of the board be held on Saturday, September 17th, 1881.

A great many recommendations have been returned for corrections.

The first name of applicants should be given in full in the recommendation. The name as given in the recommendation is the guide for filling out the diploma; let it therefore be *plainly, written and correctly spelled* in that document. Read also, in this connection, the following letter:

MORE CONCERNING COUNTY BOARDS AND STATE DIPLOMAS.—To ———, Superintendent of ——— County: Dear Sir—The State Board of Education, at a meeting held this day, directed me, as secretary, to return to you the inclosed papers, on the ground that the recommendation is not, in point of fact, a recommendation by *the board*, the resolution having been “adopted” by an affirmative vote of but two members. Section 1578, commencing on line 25, provides, “that no certificate shall be issued or revoked except by an affirmative vote of three members”; and the State Board holds that the voting of recommendations for diplomas partakes of the nature of issuing certificates sufficiently to bring it also within the operation of the same provision of law. At all events, an affirmative vote of but two out of five members, or, as expressed in these two recommendations, of 2 to 0 is calculated to cast such a shade of doubt upon the worthiness of the applicants, (not these particularly, but any applicants so indorsed) that the board declines to act upon them; especially as these recommendations are filed as the only “vouchers,” so to speak, for the diplomas issued.

I regret exceedingly to learn from your letter which accompanied these papers, that “that there is a disposition on the part of some members of your board to make everybody pass an examination in order to procure a certificate, even the holders of State Diplomas”; and I most sincerely hope that a more liberal, just, and reasonable professional spirit will speedily prevail, and supplant this narrower disposition or tendency.

While too great care and too close a scrutiny cannot be exercised in this matter of issuing certificates, it should be remembered that there are two extremes to be avoided. The tendency of your board is to one of these extremes. It is a tendency in direct opposition to what we are striving for; viz., to arouse and stimulate the professional spirit; to inspire in our teachers an honorable and worthy ambition to attain to that excellence which shall give them a recognized standing and position in their profession throughout the State; a position which shall relieve them from all future examinations; and which shall thus afford them the opportunity for a wider range of reading and study, and a broader and more liberal culture than is possible when they are required to be in constant readiness for frequent examinations upon the minor technicalities of the limited range of subjects embraced in the curriculum of our district schools.

It is a tendency, the result of which is calculated to work a hardship and an injustice to those very teachers whom it is designed to protect; viz., those who are examined and certificated in your county; because, when they shall hereafter go out into other parts of the State, armed with State credentials obtained through

your county board, they will be met with a spirit of retaliation on the part of those boards from whose counties applicants fortified with similar credentials have been refused recognition by your board—a condition of things to be deeply deplored, and to be resolutely guarded against.

I shall trust you, Mr. Superintendent, to present this subject to your board in a more forcible and effective manner than can be done at this time, and within the limits of a mere business letter, and shall hope to learn of good results.

AUGUST APPORTIONMENT OF STATE SCHOOL MONEY.—In compliance with an act of the Legislature, I have the honor to report as follows:

The securities held in trust for the school fund by the State Treasurer, consist of bonds of the State of California, amounting to \$1,737,500, together with bonds of different counties of this State, aggregating \$252,900, which are described as follows:

State Capitol Bonds, 1870—seven per cent.....	\$236,000 00	
State Capitol Bonds, 1872—seven per cent.....	115,000 00	
State Funded Debt Bonds, 1873—six per cent.....	1,386,500 00	
		<u>\$1,737,500 00</u>
Humboldt County Bonds—nine per cent.....	\$25,000 00	
Mendocino County Bonds—eight per cent.....	10,000 00	
Napa County Bonds—seven per cent.....	60,000 00	
Sacramento County Bonds—six per cent.....	26,400 00	
San Luis Obispo County Bonds—ten per cent.....	10,000 00	
San Luis Obispo County Bonds—eight per cent...	50,000 00	
Santa Barbara County Bonds—ten per cent.....	20,000 00	
Solano County Bonds—seven per cent.....	10,000 00	
Stanislaus County Bonds—eight per cent.....	10,000 00	
Tehama County Bonds—eight per cent.....	11,500 00	
Tulare County Bonds—ten per cent.....	20,000 00	
		<u>252,900 00</u>
Total securities held in trust for the School Fund.....		<u>\$1,990,400 00</u>

The money in the State treasury belonging to the State school fund, subject to apportionment, is \$399,298.89, as follows:

Balance unapportioned February 19th, 1881.....		\$2,093 43
Amount subject to apportionment at the close of the 32nd fiscal year, ending June 30th, 1881, received from the following sources:		
From property tax.....	\$140,649 85	
From State poll tax.....	140,757 43	
From interest on bonds held in trust.....	1,765 58	
From interest on State school lands.....	18,781 98	
From sale of Geological Survey Reports.....	57 40	
		<u>302,012 24</u>
Amount received from the following sources since July 1st, subject to apportionment:		
From property tax.....	\$3,322 78	
From State poll tax.....	33,302 60	
From interest on bonds held in trust.....	58,103 75	
From interest on State school lands.....	464 09	
		<u>95,193 22</u>
Total amount subject to apportionment August 1st, 1881.....		<u>\$399,298 89</u>

Yours respectfully,

D. M. KENFIELD, Controller.

SACRAMENTO, August 12th, 1881.

APPORTIONMENT.

Total number of census children between five and seventeen years of age, entitled to receive school money, 211,237; amount per child, \$1.89; amount apportioned, \$399,237.93.

Counties.	No. Children.	Amount.	Counties.	No. Children.	Amount.
Alameda	15,677	\$29,629 53	Sacramento	7,208	13,623 12
Alpine	97	183 33	San Benito	1,578	2,982 42
Amador	2,819	5,327 91	San Bernardino	2,460	4,649 40
Butte	3,916	7,401 24	San Diego	1,991	3,762 99
Calaveras	2,298	4,343 22	San Francisco	55,115	104,167 35
Colusa	3,957	5,777 73	San Joaquin	5,536	10,463 04
Contra Costa	3,462	6,543 18	San Luis Obispo	2,795	5,282 55
Del Norte	454	858 06	San Mateo	2,398	4,532 22
El Dorado	2,377	4,492 53	Santa Barbara	3,073	5,807 97
Fresno	2,377	4,492 53	Santa Clara	9,053	17,110 17
Humboldt	3,951	7,467 39	Santa Cruz	3,738	7,064 82
Inyo	452	854 28	Shasta	2,237	4,227 93
Kern	1,212	2,290 68	Sierra	1,172	2,215 08
Lake	1,571	2,969 19	Siskiyou	1,860	3,515 40
Lassen	885	1,672 65	Solano	4,977	9,406 53
Los Angeles	10,609	20,051 01	Sonoma	7,236	13,676 04
Marin	2,188	4,135 32	Stanislaus	1,970	3,723 30
Mariposa	972	1,837 08	Sutter	1,442	2,725 38
Mendocino	3,343	6,318 27	Tehama	2,346	4,433 94
Merced	1,339	2,530 71	Trinity	707	1,336 23
Modoc	1,117	2,111 13	Tulare	3,497	6,609 33
Mono	554	1,047 06	Tuolumne	1,712	3,235 68
Monterey	3,189	6,027 21	Ventura	1,493	2,821 77
Napa	3,228	6,100 92	Yolo	3,089	5,838 21
Nevada	5,056	9,555 84	Yuba	3,380	4,498 20
Placer	2,951	5,577 39			
Plumas	1,023	1,933 47			
			Total	211,237	\$399,237 93

FRED. M. CAMPBELL,

Superintendent of Public Instruction.

SACRAMENTO, August 18th, 1881.

STATE NORMAL SCHOOL.—The new term of the Normal School has opened under the most flattering conditions. There were examined for admission to the various classes of the institution *one hundred and fifty-nine* applicants, a number very largely in excess of that at the opening of any previous term.

Of this number, twelve were admitted to the senior class, eight to the advanced middle class, seventeen to the lower middle class, and eighty-two to the junior class; while forty were assigned to the preparatory class or rejected.

The pupils examined represent thirty-five counties of this State, while four are from other States, as follows: Alameda, 1; Butte, 3; Colusa, 2; Contra Costa, 3; Calaveras, 2; Ed Dorado, 3; Inyo, 1; Lake, 2; Monterey, 4; Mendocino, 1; Merced, 1; Marin, 1; Mono, 1; Nevada, 6; Napa, 2; Placer, 2; Plumas, 2; Shasta, 1; Santa Clara, 67; Stanislaus, 2; San Diego, 5; San Bernardino, 3; Solano, 2; Santa Cruz, 3; San Benito, 1; San Joaquin, 3; Sonoma, 1; San Luis Obispo, 1; Sacramento, 7; San Francisco, 6; Tulare, 2; Tehama, 2; Tuolumne, 3; Ventura, 1; Yolo, 8; Michigan, 2; Washington Ter., 1; Wisconsin, 1.

COUNTY INSTITUTES.—The State Superintendent has appointments for institutes as follows: September 8th, San Mateo County; September 14th, Sonoma County; September 26th, Solano County; October 12th to 14th, Yolo County; November 10th, Mariposa; November 14th and 15th, Tehama County; November 17th and 18th, Butte County.

REPORTS FROM COUNTY SUPERINTENDENTS.—As no report is made by the State Superintendent until next year, it is my intention to publish in this department of the JOURNAL extracts from the reports of county superintendents for the year ending June 30th, 1881.

These extracts cannot fail to be interesting reading, containing as they will reliable information of the condition of the schools and the progress of public education in all parts of the State in this the second year of the system as inaugurated by the adoption of the new Constitution, and reorganized under the laws passed in conformity thereto. The publishers of the JOURNAL have for this purpose kindly and generously placed at my disposal additional room, curtailing to that end the space usually devoted to "Educational Intelligence." I embrace this opportunity to gratefully acknowledge this token of their generous courtesy.

ALAMEDA COUNTY.

J. C. GILSON, Superintendent.

The schools, generally, are doing better work under the "new regime" County course of study than they did under the old, when using the State course of study.

The school officers are becoming more careful in the selection of teachers, and are willing to pay as liberal compensation as the state of their funds will permit.

There have been fewer changes of teachers in the schools than heretofore, which, in part at least, I believe is owing to more intelligent teachers, and, I might also add, to a more thorough appreciation of *good* teachers by parents.

Both Oakland and Alameda are most fortunate in having so many highly competent and efficient teachers, and who not only possess scholastic ability of a remarkable order, but rare tact for their work.

Oakland has from time to time secured some of its best teachers from our country schools of this county; and, in fact, since the Athens of the Pacific Coast pays first-class wages, she has but to beckon to the best teachers in the outside schools of the county and they gladly respond.

ALPINE COUNTY.

P. W. PARKER, Superintendent.

The school property, in buildings, furniture, and libraries, has been considerably improved, and, as a consequence, the pupils enjoy better facilities for education than they did last year. Business in the county is very much depressed, and, of course, the schools suffer also.

BUTTE COUNTY.

JESSE WOOD, Superintendent.

Nothing special. The new law works admirably.

The only difficulty now occurring to me is this: Trustees are now required to report on the 1st of July, and they report business transacted up to June 30th, at midnight? Some of them are fifty miles from the Superintendent's office. How can this be thus? Perhaps the 10th of July would be better, and still give the Superintendent time to work their reports into his.

(Section 1817, subd. 17—Law does not require trustees' reports to be in hands of Superintendent July 1st, but his report must include all transaction up to that date. Reasonable time should be given to complete reports—10 days, if necessary. F. M. C.)

CONTRA COSTA COUNTY.

A. A. BAILEY, Superintendent.

It is safe to report progress for the schools of Contra Costa County. The attendance has increased, and the teachers have been more systematic in their work. A county manual for the public schools, issued by the Board of Education, has done much to unify the work. The superintendent has devoted his whole time to the duties of the office. The course of study as laid down in the manual has proved satisfactory to teachers and patrons.

A great interest has been awakened throughout the county by the adoption of a system of graduation from the grammar schools, as provided by sec. 1771 of the school law. Examinations were held in four different localities on the 17th and 18th of June, conducted in each place by a member of the Board of Education. The examinations were principally written, the same questions being used throughout the county. Twenty applicants were awarded diplomas of graduation. We have had the neat blanks, furnished by the State for that purpose, engrossed in the best style, and believe that our efforts will do much to stimulate the public, and keep the older ones longer in school than heretofore.

A. Thurber and A. J. Young, members of the Board of Education, whose terms expired July 1st, have been reappointed by the Board of Supervisors. The supervisors take a deep interest in school matters, and are always ready to grant any reasonable request for the benefit of this department.

Alhambra school district has completed a neat and commodious building in place of the one destroyed by fire one year ago.

A new building for the primary department is in process of erection at Nortonville, in Carbondale district.

The new district of Sand Mound was almost depopulated by the winter flood, and will probably lose its organization.

Financially, we have been better provided for than at my last report. With the liberal tax voted by the Board of Supervisors, had the railroad company not been repudiators, we should have had no cause for complaint.

The school law is, on the whole, quite satisfactory. The most objectionable feature of the law framed in 1880 having been repealed, I would now second the suggestion made one year ago by the Superintendent of Santa Clara County.

There should be some more stringent rules adopted to compel attendance at Institute of teachers who are disposed to evade the law, and either remain away, or leave before the close of the session. I think it should be one of the duties of the county board to summon such to appear and show good cause why their certificate should not be revoked.*

COLUSA COUNTY.

SAMUEL HOCHINS, Superintendent.

The schools of this county have made very fair progress during the past year. Our teachers, with but few exceptions, follow teaching as a profession, and are striving in every laudable way to make our schools as good as the best. The financial condition of our schools is also much better than formerly. The total expenditures for the past year are \$50,376.55, much greater than any former year; and yet, the balance on hand is more

* NOTE.—SECTION 1560, Political Code, now provides that "Every teacher employed in a public school in the county, must attend such Institute, and participate in its proceedings."

SECTION 1563 provides that "when the Institute is held during the time that teachers are employed in teaching, their pay must not be diminished by reason of their attendance."

SECTION 1771, sub-division 5th, gives the County Board of Education power to revoke, "for unprofessional conduct, the certificates granted by them."

A neglect or refusal to obey the plain provisions of the school law is certainly "unprofessional conduct," on the part of a teacher.

As teachers not unfrequently claim certain rights, privileges, or immunities, on the ground that they are "public officers" within the meaning of the law, it may be well also to call attention to section 176 of the Penal Code, which reads as follows: "Every willful omission to perform any duty enjoined by law upon any public officer, or person holding any public trust or employment, where no special provision shall have been made for the punishment of such delinquency, is punishable as a misdemeanor."

than \$10,000, which leaves our schools in good condition for the coming year. The change in the law last year, affecting the apportionment of school moneys, enabled many of our schools which formerly were only six months' schools to teach eight months, and have a surplus left. Under the law as it now exists, and with a liberal Board of Supervisors as we have, I think almost every school in our county can run eight months.

DEL NORTE COUNTY

JOHN MILLER, Superintendent.

The peculiar conditions of counties like Del Norte—still in their infant development—cannot be benefited by laws based on the doctrine of "county uniformity." It is owing to this feature, perhaps, more than to others, that the improvement of our schools is, and will needs, be tardy, until that time has come when Del Norte will take its equal station among the counties of California. And since suggestions for amending the school law of this State have to be of a nature admitting of general application, and yet the needs of the county being special ones, the peculiar drawbacks in the present status cannot be reached as long as the Constitution of the State makes of all counties an *olla podrida*.

The establishment of a central board of examination is desirable in order to lay the foundation for a *profession* of teaching. The certificates to be granted by such board—and these only—should entitle the holders to teach in any of the counties of the State, without further annoyance by county or city boards of education. The powers of such a board were not to be delegated to county or city boards of education, but applicants had to appear *personally* at the time and place fixed for such examination.

County superintendents, I again submit, should have power to draw their warrants on the treasurer, and the worse than useless present mode of circumlocutory proceedings should be abolished.

The salary, a pittance of \$250 in county scrip, of the school Superintendent of Del Norte, should be raised, and your attention is respectfully called to this feature in a County Government Bill to be framed and passed by the next Legislature.

A law should be passed giving to county superintendents ample discretionary powers to remedy existing defects and neglects in the improvement of school grounds.

There live in this county, under the guardianship of whites, a certain number of half-breed children, who, in former years, were by the census marshals listed as "Indians." The influence of their white "sires" has, in the mean time, strengthened, and, latterly, prevailed to this extent that those children are listed as "whites." In order to secure and hereafter preserve this important feature in the statistics of the school census, columns with the appropriate heading of *half-breed Indians* should be introduced in the Marshal's report.

The line between "repairs" and "building" of school-houses should be more distinctly drawn, to prevent boards of trustees from jewing down the teacher in his salary to cover useful and needed, yet illegitimate, expenses incurred in the enlargement of school-houses, and the purchase of furniture. While there is a law in the statute books providing for the levy of a special district tax to secure additional school facilities, the method almost exclusively prevailing is the lowering of teachers' salaries, ignorantly regardless of the train of evils thereby engendered.

EL DORADO COUNTY.

C. E. MARKHAM, Superintendent.

In all educational interests there is strong and steady advancement.

FRESNO COUNTY.

R. H. BRAMLET, Superintendent.

Unfortunately for the schools, the Superintendent of Fresno County is also Auditor, consequently he knows very little about the schools. A certain per cent. of the county

school fund should be set aside for contingent expenses, and trustees be allowed to use that and no more for contingencies. In any case where this fund was not all used for contingent expenses, allow it to revert to the school fund, and be used for teaching.

HUMBOLDT COUNTY.

J. B. CASTERLIN, Superintendent.

The close of the school year shows that all our schools have been maintained the required six months, a large majority, as shown by this report, having been sustained eight months or more.

While our census-roll shows a falling off of ninety from last year, owing in great part, no doubt, to an epidemic which ravaged some portions of our county, the school statistics show a gain of 78 enrolled; of 51.35 in average number belonging, and 58 in average daily attendance; proving that the schools are reaching more children, and, we trust, doing proportionately more good, as I have reason to believe that the class of work done is not inferior in any respect to that of former years.

KERN COUNTY.

F. S. WALLACE, Superintendent.

The progress of our schools has been somewhat injured by failure of the railroad company to pay taxes, but as a rule the schools have been quite well conducted, and much good work done. We have had an excellent corps of teachers, zealous, energetic workers. We have delayed publication of a course of study in consequence of not having adopted a full set of text-books. We have only changed a part of those adopted by the State Board. We shall soon have a course of study, a copy of which I will send you as soon as published.

I think sec. 1623 should be amended so as to make districts directly liable for all orders, as it would make school orders negotiable; and 1621 should be so amended as to require trustees to maintain schools as long as possible, but should there be any unexpended balance it should not be reapportioned, as it frequently happens that it is difficult to tell how much money there will be in the June apportionment. Responsible trustees close their schools, and if they have a balance they spend it to avoid reapportionment, while irresponsible trustees use all their district money, and even draw in excess of amount due.*

If all orders could be paid in the order in which they are filed,† they would be worth much more, and banks would not draw 10 per cent. of our school money where there are no funds to meet outstanding orders.

I think it would be far better to place the examination questions in the hands of the State Board again, as there is a probability of our standard being lowered, as during the present year applications for teachers' positions are at least treble those of last year, showing that the number of teachers is increasing rapidly.

NOTICE.

ALL letters referring to business with this JOURNAL, and all postal orders and drafts, must be addressed to H. P. Carlton & Co., Publishers and Managers.

* Clearly illegal.—F. M. C.

† Section 1543 provides that the requisitions shall be drawn in this order.—F. M. C.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESNEY, to whom all communications in reference thereto must be addressed.

PLANETS IN SEPTEMBER.—MERCURY is an evening star, setting on the 7th at 6 h. 40 m. P. M.; on the 17th at 6 h. 28 m. P. M., and on the 27th at 6 h. 12 m. P. M. He is near the moon on the 26th, and at his greatest distance from the sun on the 29th. VENUS is a morning star, rising on the 7th at 2 h. 0 m. A. M.; on the 17th at 2 h. 17 m. A. M., and on the 27th at 2 h. 36 m. A. M. She is near the moon on the 20th. MARS rises on the 7th at 10 h. 15 m. P. M.; on the 17th at 9 h. 50 m. P. M., and on the 27th at 9 h. 21 m. P. M. He is near the moon on the 15th, in quadrature with the sun on the 21st, and in his ascending node on the 27th. JUPITER rises on the 7th at 8 h. 58 m. P. M.; on the 17th at 8 h. 13 m. P. M., and on the 27th at 7 h. 25 m. P. M. He is near the moon on the 13th, and stationary among the stars on the 14th. SATURN rises on the 7th at 8 h. 34 m. P. M.; on the 17th at 7 h. 48 m. P. M., and on the 27th at 7 h. 25 m. P. M. He is near the moon on the 12th.

AN important and hitherto unknown treatise by Copernicus, on the movements of the celestial bodies, has been discovered in the archives of the astronomical observatory at Stockholm. This treatise is said to fill a valuable place among the writings of the great astronomer. There is no doubt as to its genuineness, as it is soon to be printed and given to the world.

THERE are 45,000 persons engaged in the manufacture of pottery in England and Wales. The death rate among the males is 38 per cent. higher than among the male element at large. In the lungs of a potter who recently died of consumption were found 48 per cent. of silica, 18 of alumina, and 5 of oxide of iron—articles of constant use in his business.

THE DIVISION OF THE CIRCLE—The problem, long ago practically abandoned by mathematicians as impossible, of dividing exactly, theoretically, and mechanically, any angle into any number of parts, has at last been solved. A patent protecting the mechanical means used for this purpose was issued to O. P. Dexter, who has written a pamphlet ("The Division of Angles") fully explaining the mathematical theory of the subject, which, we understand, will be published at an early date by the American News Company of New York.

THE first blooming of the yellow water lily (*Nymphaea flava*) in Cincinnati has called out in the *Commercial* the following facts with regard to the history of this recently rare plant:

"John James Audubon first discovered the yellow water lily in Florida, and mentioned it; but none of the botanists of the time could ever find it, and it was concluded that Audubon must have been mistaken. A few years ago, however, Mrs. Mary B. Treat rediscovered the plant in Florida. Since then specimens of it have been sent to various parts of the world. It is, however, a rare plant, and until this summer has never been known to bloom away from its native home. There is another specimen now in bloom at the Kew Gardens, London. In shape, this rare flower resembles the well-known white water lily. It is smaller, however. The blossom is of a bright canary-yellow, measuring nearly two inches in diameter. The leaves are very beautiful. They are heart-shaped and variegated in color. The top is green, flecked with purple, and the under side is bright purple-red."

Several blooms of the *Nymphaea flava* have recently been brought to this city from a near-by town on the Hudson, from which we infer that the *Commercial* overstates its rarity.

ON the night of April 4th the population of the United Kingdom of Great Britain and Ireland, including the islands in British waters (the Isle of Man and the Channel Islands), together with the army and navy, and merchant seamen abroad, was found to be 35,246,562, an increase of 4,147,236 as compared with the returns of the census of 1871. The females exceed the males by a little over 700,000. The percentage of population for England was 69.8; for Wales, 3.8; for Scotland, 10.6; for Ireland, 14.6. The remainder, 1.2 per cent. was distributed between the Isle of Man (0.2), the Channel Islands (0.3), and the army, navy, and seamen abroad (0.7).

M. POLIAKOFF, the distinguished Russian naturalist, has examined a horse presented by Colonel Prejvalsky to the St. Petersburg Academy, and decides it to be a new species, which he has named *Equus Prejwalskii*. It appears that the new representative of the family of undivided-hoofed mammals is in some respects intermediate between the domestic horse and the wild ass, but it differs from the asinine genus in having four callosities, one on each leg. In the form of skull, absence of dorsal stripe, and other particulars, it resembles the domestic horse. This newly recorded animal is indigenous to the plains and deserts of Central Asia, and has not hitherto fallen under the dominion of man.

PROFESSOR FORT has presented the question of premature interments to the French Academy in a paper on artificial respiration. One fact he mentions is, that he was enabled to restore to life a child three years old by practicing artificial respiration on it some four hours, commencing three hours and a half after apparent death. A similar case is reported by Dr. Fournol, of Billancourt, who reanimated a nearly drowned person after four hours of artificial respiration. This person had been in the water ten minutes, and the doctor arrived one hour after asphyxia. Professor Fort advocates also the utility of artificial respiration in order to eliminate the poison from the lungs and glands. The length of time it is desirable to practice artificial respiration in any case of apparent death from asphyxia may be said to be several hours.

ONE of the chief hindrances to telegraphing in Japan is the grounding of the current by spider lines. The trees bordering the highways swarm with spiders, which spin their webs everywhere between the earth, wires, posts, insulators, and trees. When the spider webs are covered with heavy dews they become good conductors and run the messages to earth. The only way to remove the difficulty is by employing men to sweep the wires with brushes of bamboo; but as the spiders are more numerous and persistent than the brush users, the difficulty remains always a serious one.

A STRIKING instance of ingenuity in taking advantage of the resources of nature in an emergency, is found in Sir Samuel Baker's account of his travels in Abyssinia. His stock of soap had become exhausted; and as he possessed abundance of various kinds of fat, including that of elephants, hippopotami, lions, and rhinoceros, he determined to convert a quantity of this grease into soap. For this purpose he required both potash and lime; and how were these to be obtained? The negleek tree, he found, was exceptionally rich in potash; he therefore burned a large quantity, and made a strong lye with the ashes, which he concentrated by boiling. There was no limestone; but the river produced a plentiful supply of oyster-shells, which, if burned, produce excellent lime. What was next wanted was a kiln in which to burn the shells, and this he constructed out of one of those great anthills, which rise to ten feet high, common to those valleys, and which possess a very hard external crust. Two natives hollowed out one of those hills; a proper draught hole was made below from the outside; it was loaded with wood, and filled with some six bushels of oyster-shells, which were again covered with fuel; and after burning twenty-four hours a supply of excellent lime was obtained. Then commenced his soap boiling, which was effected in a large copper pot of Egyptian manufacture. The ingredients of potash, lime, and fat were then carefully mixed; and after boiling ten hours, and having been constantly stirred, he obtained excellent soap of which he had in all about forty pounds' weight.

NEWS RECORD.

OUR record extends from JULY 30th to AUGUST 30th, inclusive.

Foreign and Domestic.

At date of writing, August 26th, the President's condition appears almost hopeless. He has had one relapse after another, and despite his manly and courageous struggle, he is evidently on the brink of the grave. A deep gloom over the whole nation testifies how universally this calamity touches the personal affection of every American citizen.

The election in France has resulted in an almost universal indorsement of the Republican party. The Monarchists and Bonapartists were everywhere defeated.

The convention between England and the Transvaal has at last been signed, and a republic is again established, with, however, the important addition of a British minister resident to mediate between the Boers and the adjoining negro tribes:

The latest dispatches from Afghanistan report Ayoub at Kandahar, and his ameer cousin at Khelat-i-Ghilzai, both rapidly gathering their forces for a final struggle. Persia reports the final crushing of the Kurdish marauders, and the execution of their leader, Hamgeh Ayab, and several of his relatives, who were shot at So-Uj-Balak, July 29th.

The British House of Commons has been the scene of considerable disturbance during the past month, and a most discreditable affair took place on Wednesday, the 3rd ult., when Mr. Bradlaugh, the well-known Irish member, was forcibly ejected.

There is trouble with the Apache Indians in New Mexico, where a band, supposed to be under the leadership of Nina, have been killing and plundering near Socorro and Pueblo Springs. In an engagement between the Indians and a body of Mexican troops near Paraje, thirteen Mexicans were killed.

From South America, we hear of the formation of a provisional government of Peru under Calderon; but ex-President Perolia still keeps the field, and large numbers of the Peruvian army are said to have joined him, to continue the war against Chili. Should Bolivia again take the field, as she is reported about to do, the reaction against Calderon's peace party may be fatal. Yellow fever is raging on the Isthmus of Panama and in other parts of Colombia.

The czar has come out of his fortified retreat at Gatschina and gone to Moscow, and also to the annual fair at Nijni Novgorod.

Great frauds have been discovered on the part of a number of Turkish officials, charged with the collection of the government taxes.

Switzerland is suffering from a severe drought, which has lasted for two months.

The Franco-Tunisian War still continues, but the approaching French elections rob all other matters of interest to the people of France. England and Italy have sent two more iron-clads to Tunis.

In Spain, also, there has been a general election for members of the Cortes. The results, as far as heard from, show an overwhelming majority in favor of the liberal ministry of the Premier, Sagasta.

Educational.

State Supt. Gilmour has made a yearly appointment of four gentlemen to conduct the County Teachers' Institutes in New York State. The gentlemen selected are Profs. James Johnnot of Ithaca, Lantry of Manlius, John Kennedy of New York, and Ruggles E. Post of Ithaca; the salary paid is \$2,000.

It costs \$142,000 a year to run the Michigan University, \$101,000 of which is paid to the professors.

A department is to be established in the Philadelphia Normal School to teach the girls dress-making.

The Austrian Minister of Education has ordered that every school-house shall have a small garden patch attached, in which the pupils must work to gain a practical knowledge of agriculture and horticulture.

Personal.

Professor William Dwight Whitney has received from the Emperor of Germany the Order of Merit made vacant by the death of Mr. Carlyle.

Prince Bismarck, who was a student friend of Motley's, is reported to have written an autograph letter to Mrs. Garfield.

When Mr. Gladstone's physician orders rest, the statesman takes it by collating the revised New Testament with the Greek.

BOOK NOTICES.

WORCESTER'S QUARTO DICTIONARY. Philadelphia: J. B. Lippincott & Co. San Francisco: J. A. Hoffman, No. 210 Montgomery Street. 2,508 pp. Price \$10.

Worcester's Dictionary has always been regarded by a respectable portion of our ablest scholars as the standard for the proper spelling, meaning, and pronunciation of the English language.

Many colleges prefer it to any other authority, and enthusiastically claim it as the best.

Be that as it may, it is unquestionably a magnificent work, enriching the language, cleansing it from impurities, crystallizing it into permanent and stable form. In this latest edition, the publishers surpass all previous efforts.

It is difficult within the brief space at our disposal to note more than a few of the improvements and additions. The size of the volume—2,508 pages, a library in itself, equal to a dozen common-sized books—indicates the immense range of its contents.

Among these contents, first is the vocabulary of 116,000 words, with the brief and accurate definitions for which this author has always been noted. The supplement of 204 pages contains over 12,500 words, of which 11,000 are new.

This edition makes more prominent than previous issues the plan of copious illustrations to bring out clearly the meaning and force of words. We wish this plan could be still further elaborated. We all know best what we actually see; so if the 1,100 word-cuts in the book were doubled, or even quadrupled, so much greater would be its practical value.

About the best feature—considered by itself—in the work, is its comprehensive department of synonyms. Nowhere else in literature is such a mass of accurate knowledge collected for the purpose of teaching the force and value of words as just here. It enables the teacher to dispense with the

use of a separate work on synonyms, giving him instead a more logical system of synonyms and brief treatises. There is given also a full vocabulary of such new words as science, art, and literature have contributed to the language since the first publication of the work. A few new diacritical marks are introduced, which will assist the student in obtaining an accurate pronunciation.

The library fund is now available throughout this State for the purchase of books. We advise trustees not to neglect the opportunity, but to place this colossal work in their schools.

THE DICTIONARY OF EDUCATION AND INSTRUCTION. By Henry Kiddle and A. J. Schem. New York: A. Steiger. 320 pp. Price \$1.50.

This book is a condensation of the well-known and valuable Cyclopaedia of Education, by the same authors. The most important articles from that work are selected, mainly from the sections on the theory of education and instruction. This makes the dictionary an especially valuable book for young teachers and for those preparing to teach. It is, in fact, one of the best of recent additions to our text-books on the theory and practice of teaching. It should be in the possession of every teacher, and is in its proper place on the walls of the school library.

LITERARY STYLE, AND OTHER ESSAYS. By William Mathews, LL. D. Chicago: S. C. Griggs & Co. San Francisco: A. L. Bancroft & Co. 345 pp. Price \$1.50.

The book of readable essays is more rare than even the great poem. This work is a fair type of a number by Prof. Mathews, which are not readable merely, but convey instruction in a most attractive form. The essay which gives title to the volume is not a chapter from the rhetoric. It is a brightly written article, abounding in examples of

good and bad style; showing why genius in the conception of glowing fancies has not always resulted in literary success; that excellence in literature, as in everything else, depends on labor. There are twenty-one essays in the book, some of the best of which are "Periodical Literature," "Sensitiveness to Criticism," "Hot-house Education," "Who are Gentlemen?" "Americanisms," "Originality," "The Modesty of Genius," etc. Some of Dr. Mathews's other books, such as "Getting on in the World," and "Words: Their Use and Abuse," as well as the one before us, are precisely of the sort entitled to a place on the shelves of the school library.

We think the reading and discussion of such essays will do more toward forming a good literary style than the study of any amount of matter from the ordinary textbook.

HANDBOOK OF ENGLISH SYNONYMS, with an appendix showing the Correct Uses of Prepositions, and a Collection of Foreign Phrases. By L. J. Campbell. Boston: Lee & Shepard. San Francisco: Doxey & Co., 691 Market Street. 160 pp. Price 50 cents.

On the cover of this little handbook are printed the words, "The Right Word in the Right Place;" and to find the right word at all times, this book is without an equal. It is handy and complete; exactly what we have long needed by our side. It contains 40,000 words, besides a chapter on prepositions, by far its most valuable feature.

Every teacher who reads and writes—and we suppose they all do both—should possess a copy of this handbook, and it should be accessible to all the more advanced pupils in every school.

ENGLISH CLASSICS. For Classes in English Literature, Supplementary Reading, Grammar, etc. Edited by Eminent English Scholars. Each volume contains a Sketch of the Author's Life, Prefatory and Explanatory Notes, etc., etc.

1. The Prophecy of Dante. (Canto I., II.) Byron.
2. L'Allegro and Il Penseroso. Milton.
3. Essays. Civil and Moral. (Selected.) Lord Bacon.
4. Prisoner of Chillon. Byron.

5. The Fire Worshippers. (Lalla Rookh. Selected from Parts I. and II.) Moore.
6. The Deserted Village. Goldsmith.
7. Marmion. (Selected from Canto VI.) Scott.
8. The Lay of the Last Minstrel. (Introd. and Canto I.) Scott.
9. The Cotter's Saturday Night, and Other Poems. Burns.
10. The Village. Crabbe.
11. The Pleasures of Hope. (Abridgment Part I.) Campbell.
12. Essay on Bunyan's Pilgrim's Progress. Macaulay.
13. The Armada, and Other Poems. Macaulay.
14. The Merchant of Venice. (Selections from Acts I., III., IV.) Shakspeare.
15. The Traveler. Goldsmith.
16. The Queen's Wake. Hogg.
17. The Ancient Mariner. Coleridge.

These books are bound with paper covers, and are sold at the following low price: 12 copies for \$1.20; 100 copies for \$9; 1000 copies for \$80. A single copy sent by mail for examination, with a view to its introduction, on receipt of 10 cents. New York: Clark & Maynard.

The study of English literature is, at this time, receiving so much attention in our higher and better schools, that the publication of these little books is eminently timely. They are convenient in form and size; printed in clear type, and bound firmly in good paper covers. The notes are very full, occupying about half of each book. These merits, together with the low price at which they are offered, adapt the entire series to the wants of our schools.

THE COMPLETE ALGEBRA FOR HIGH SCHOOLS, PREPARATORY SCHOOLS, AND ACADEMIES. By Edward Olney, Professor of Mathematics in Michigan University. New York: Sheldon & Co.

This is not an addition to the already numberless volumes of school algebra before the public. It is simply a new, revised, and improved edition of a work that has already been commended and approved by thousands of teachers in all parts of the country.

Teachers who have some other algebra already in use, will find this a good reference book for their desks. The analyses are clear and comprehensive, and the examples to illustrate principles numerous.

THE LONGFELLOW LEAFLETS. Prepared by Miss Hodgdon. Boston: Houghton, Mifflin & Co. San Francisco: A. L. Bancroft & Co. Price 50 cents.

This is a beautiful arrangement of Longfellow's shorter poems, designed for the use of pupils in our schools. Each leaf contains some poem, illustrated with a charming little wood-engraving. These leaflets are also bound into a volume with paper covers, for the use of the teacher.

It is intended that these leaflets shall be divided among a class, and taken to the homes of the children, there to be read and memorized. We believe the idea an excellent one. Teachers should seek further information concerning it, and examine a collection of the leaflets.

A NAMELESS NOBLEMAN. Round Robin Series. Boston: Houghton, Mifflin & Co. San Francisco: A. L. Bancroft & Co.

This is an interesting story of the early part of the reign of Louis XIV. of France. The scene is laid in Southern France and in Massachusetts. The chief characters, those who stand out from the body of the book, are the nobleman, (name and title unknown) and a New England maiden of extinct species; a Jesuit, the friend of the nobleman, but more devoted, nevertheless, to the principles and traditions of his order; and a giddy-headed, ambitious, inconstant French girl, cousin to the hero.

It is a love story well told, pure in tone, healthy in effects. It gives a passing but clear glimpse of the social condition of France under "Le Grande Monarque," of the New England colonies in their infancy.

It has some faults. First are a few improbabilities. The most serious, however, is the fact that the possibilities of the plot warrant a more elaborated story. The author has shown genius in conceiving a plan which her ability did not (in this book at least) enable her to round out and complete. It is, however, a safe book; an excellent book of its class, to be read by children as well as by older folks.

A GRADUATING SYSTEM FOR COUNTRY SCHOOLS. By Alexander L. Wade, with an introduction by Rev. J. R. Thompson, A. M., State Superintendent of West Virginia. Boston: New

England Publishing Company, 16 Hawley Street. San Francisco: A. L. Bancroft & Co.

This book is devoted to the explanation of a plan for graduating class, giving diplomas, forming alumni associations, issuing catalogues, etc., in district schools, thereby arousing and sustaining the interest of pupils, and securing the co-operation of parents. Such a plan has been used in this State for two or three years quite generally. Our methods have not, however, been thoroughly systematized, nor developed, as in this book, into a complete, harmonious plan.

The book is one that should be universally read by teachers and superintendents. They will find practical suggestions that cannot but be serviceable.

THE REVISED NEW TESTAMENT. Boston: Lee & Shepard. San Francisco: Doney & Co., 691 Market Street. Price \$1.

This is an excellent edition of the revised version of the New Testament. The type is clear, the paper good, and the binding serviceable. The price makes this a very desirable edition.

THE ART OF SCHOOL MANAGEMENT. A text-book for Normal schools and Normal Institutes, and a reference book for teachers, school-officers, and parents. By J. Baldwin. New York: D. Appleton & Co. San Francisco: James T. White & Co., 23 Dupont Street. 504 pp. Price \$1.50.

One of the most encouraging signs of educational progress in our country is the evident demand for and appreciation of our native pedagogic literature.

It is but a few years since we were unable to reply to the reproach that America had no educational literature. Now Horace Mann and Barnard, Philbrick and Swett, Wickersham and Calkins, Harris and Page, have developed for us the science of education in a permanent form. And to this galaxy of eminent names, we must add the author of the book before us. It is divided into ten parts, as follows: Educational Instrumentalities; School Organization; School Government; Courses of Study and Programmes; Study and Teaching; Class Management; Examination, Records, and Graduation; Professional Education; Sys-

tematic Progress of Education; Graded Schools.

The book is not entirely faultless. In some instances the writer enters into too minute details of just what the teacher should say and do. We refer particularly to his suggestions regarding punishment. We have none of the mawkish sentimentality, now but too prevalent, about corporal punishment; but we believe that in inflicting such punishment the teacher should be guided entirely by the surrounding circumstance. Further, to give such minute rules as Prof. Baldwin lays down is unnecessary for the competent teacher, and labor wasted on him who is inefficient or tactless.

The book, on the whole, is practical, and abounds in ideas and suggestions which the ambitious and energetic teacher can readily carry out. It is different in its general plan and direction from Swett's Methods of Teaching, and the two books used side by side will be found complementary the one to the other.

GEOGRAPHICAL STUDIES AND COMPARATIVE GEOGRAPHY. By Carl Ritter. Translated from the original German by W. L. Gage. Cincinnati and New York: Van Antwerp, Bragg & Co.

COMPARATIVE GEOGRAPHY. 220 pp. Price \$1.

GEOGRAPHICAL STUDIES. 356 pp. Price 1.25.

It is hardly necessary to tell our readers that Carl Ritter was the great master of modern geographical science. From his investigations, discoveries, and writings, has resulted a proper conception of the world in which we live, as well as the influence of this environment on the individual and the race.

In the limited space at our disposal, it is impossible to review even a tithe of Carl Ritter's labors. The two books before us comprise ten lectures. In Comparative Geography, there are, Introductory Essay to General Comparative Geography; Observations on the Fixed Forms of the Earth's Surface; The Geographical Position and Horizontal Extension of the Continents; Form and Numbers as Auxiliary in Representing the Relations of Geographical Spaces; The Historical Element in Geographical Science; Remarks on the Re-

sources of the Earth; The External Features of the Earth in their Influence on the Course of History; The Earth's Surface; The Configuration of the Continents.

From these titles, our readers will observe the immense range of knowledge embraced in these lectures. We know we can safely say that no man thoroughly comprehends geography who has not read or learned some of the matter here presented.

The translator has done his work with judgment. In fact, by not giving us in too many instances a literal translation, he avoids Ritter's involved and obscure style. In their mechanical appearance, the books are first-class. The paper is excellent, the type good, and binding satisfactory.

These books should be placed, not only in the school library, but in the private collection of every teacher; and every progressive teacher will have them.

TO PUBLISHERS AND READERS:

Attention is called to the large number of Book Notices in this number of the JOURNAL. An equal number will be published in our October and November issues. We have published so many notices at this time, because this is the season when the library fund of the two thousand three hundred districts of the State is amply supplied with funds, and when trustees are enabled to fill their libraries. If publishers, when they send us books, will notify us of the price, they will benefit themselves, and save us some trouble in answering questions.

THE MECHANICS' FAIR.

The Mechanics' Fair, which has been open since the 2nd of August, certainly deserves favorable mention in an educational journal. Such an exhibition, to a considerable degree, undoubtedly educates the whole people.

The exhibit at this time is quite up to the usual standard, though many prominent former exhibitors do not appear this year; such as the display of woolen goods, of philosophical instruments, etc. One of the most interesting objects on exhibition is the dynamo-electric machine for generating the Brush electric light. The attendance this year is, we understand, quite as good as formerly.

Character Song
for Exhibitions.
Allegretto.

A Black Scholar's Song.

By C. M. D.

1. I's a gay and happy lit - tle colored lad, As you see, Some -
2. In my books dar are such fun - ny lit - tle marks, Black as I, Some

times I's good but mostly I's as bad as can be, I likes to go to school, But I
stand for cats and some for dogs dat barks, ki! yi! yi! I cant tell b from d, For dey

hates de redwood rule, For I neber likes to lie across de schoolmaster's knee.
looks so like you see, And I tinks it is no use for dis poor darkey to try.

CHORUS.

Oh! no! no! no! no! } I likes to go to school, But I
cant tell b from d, For dey

hates de redwood rule, For I neber likes to lie across de schoolmaster's knee.
looks so like you see, And I tinks it is no use for dis poor darkey to try.

3. Oh! I know a pretty little colored Miss
Swing Lo here,
You neber saw a nicer gal to kiss
Than my dear.
Her nose is flat as mine,
And her cheeks so bright do shine,
Dat you neber need a candle when dat
sweet gal is near.

4. I likes to go to school for dat gal goes
Long wid me,
I know she is as sweet as any rose—
So is she.
I neber stays away,
For dat gal goes ebry day,
And we're just about as happy as two
darkeys can be.

NOTE—In all darkey songs every r in the middle or at the end of a word should be sounded like au.

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ORGAN OF THE

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SAN FRANCISCO, OCTOBER, 1881.

No. 10

LESSONS IN BOTANY.

OCTOBER WILD FLOWERS OF CALIFORNIA.

BY VOLNEY RATTAN.

OCTOBER is the last month of the year, as plants reckon time in California. One by one the wild flowers which carpeted the hills and plains in May have put to bed their ripened seeds, and covered them with sun-browned leaves. A few lovers of dryness and heat, and those whose lots have fallen in moist places, yet linger to witness the baptism of the new year. Most of these are gray friars from the old world, or native Quakers, vaguely classed as weeds, if noticed at all, by the multitude. A few daily put on fresh bits of color above their dust-laden foliage. *Zauschneria* yet displays her scarlet tubes among the rocks along wooded cañons. The *Chili Troximom*, whose flowers so much resemble those of the dandelion; the resinous *Grindelia* which reminds us of poison-oak; moisture-loving *Cotula*, bedecked like a soldier with golden buttons; verbena-like *Abronias*, (yellow and pink) creeping in moist sand; pearly *Anaphalis*, white in spite of the sand-laden west wind; naked-stemmed *Eriogonums*, with pinkish balls of tiny flowers; and other less conspicuous plants—give a little of cheerful color to the somber hills of the Golden Gate. Along country roads, in stubble fields, and on fallow ground, are the satiny yellow flowers of *Eschscholtzia*; the white or yellow *Hemizonias*, sticky with tar; widely branching *Eriogonums*, reddening whole fields; white or pinkish bind-weed, holding the low grounds in spite of the farmer; and bristling *Eremocarpus*

beloved by doves. These, with scores of weeds flowerless to the careless observer, furnish material for continuous botanical study through the month of October.

But I had nearly forgotten that you were to have a lesson to-day. You want to know more definitely how to distinguish these plants.

Get your bonnets and hats, then, and go botanizing with me along the streets of Oakland. Those who cannot exactly duplicate this excursion can, at least, realize part of it in any of the bay counties. We will go along Ninth Street, toward Market. Your first "What-is-it?" bears yellow flowers on leafless stems a few inches in height. Their structure is like that of the daisy. Each yellow leaf ends in a tube at the bottom, from which protrude two slender diverging stigmas. At the base of the tube is what will evidently make one of the seeds (really a one-seeded pod). These yellow leaves, then, are the tops (corollas) of as many distinct flowers. Each apparently double flower is a bunch of flowers inclosed by an involucre of green leaves, exactly like a calyx. Such flowers are said to be composite. The flower heads close in the afternoon, and the next day the yellow leaves wither. By and by, after the withered leaves have fallen, these fluffy white heads open. In place of each one-leaved flower, there is now a small brown seed with a slender stem, which is tipped with a bunch of spreading white hairs. These hairs enable the seeds to ride on the wind to plant colonies of *troximons* miles away. You thought they were dandelions? No, these plants are not dandelions; but the resemblance is close enough to make the name "California dandelion" not inappropriate; especially, since the true dandelion is not a native of this State. But isn't the correct name, *troximon*, just as easy to remember? *Taraxicum*, or dandelion, is a common weed in greenswards, but does not seem to flourish out of reach of the irrigating hose, differing greatly in this respect from the *troximon*, which delights in dryness. Earlier in the season the large-flowered *troximon*, with scapes one or two feet high, was in bloom. The species now in bloom is called the *Chili troximon* by botanists, because it was first found in that country.

That coarse weed, with smooth irregularly notched leaves, no two alike, and yellow flowers similar to those of *troximon*, only they are smaller, never open so widely, and has stiffer contracted involucre, is *sonchus*, known commonly in English as sow-thistle. Linnæus named it *Sonchus oleraceus*, or, in the English form, pot-herb sonchus, since it is "fit for greens." Indeed, this plant, as well as *troximon* and dandelion, is a near relative of lettuce, and all contain a bitter milky juice. *Sonchus*, like many other foreigners, prefers a city life, and may be found flourishing in sidewalk cracks even in the heart of San Francisco. A similar native species grows in moist thickets. It may be distinguished by the more bristly leaves, which have rounded instead of angular lobes clasping the coarse stems. You may call it *Sonchus asper*, which is the same as rough *sonchus*.

These tall tar-weeds, black with dust, have composite flowers also; but their structure is remarkable. Each of the outside flowers is enwrapped at the base by a leaf of the involucre, while the remaining ten to forty flowers are in a central cup. The outer flowers are similar to those of the *toximon*, but broader

and much shorter. The cup-enclosed flowers have minute, five-lobed, bell-shaped corollas, instead of a single notched leaf. Look at these which have "gone to seed." The brown leaves of the involucre covered with black tar glands spread out to form a many-rayed star, each ray enclosing a seed. In the center a fluted transparent cup is covered with a cap of withered corollas. Pull this off and you behold the cup filled with seeds. Linnets say these seeds are good for birds. Some madias—for that is the name of this plant—have large showy blossoms; but all are covered with tar, and not likely therefore to be prized by florists.

This gray-green plant, with small pinkish pea-blossoms, the oval leaflets, mostly in threes, but always a solitary one next the flower, is Pursh's hosackia (*Hosackia Purshiana*). It is a shame that so pretty a plant should be covered with dust. Another hosackia (*H. glabra*), very different in appearance, may be found at Lone Mountain. Its slender woody stems, covered with small yellow blossoms and sharp-pointed pods, lie flat upon the ground.

This slender plant, with small leaves bunched along the lower stem and scattered upon the branches, is willow-herb. The small pink or rose-purple flowers terminating the branches each have four two-lobed petals growing upon a four-lobed calyx cup, which sits upon the end of what becomes a four-sided seed-pod. Linnæus named the genus "epilobium," which means a violet upon a pod, because he fancied the flowers of the kind which he first saw (he never saw this kind) resembled violets. The common name is more properly applied to those kinds which have willow-like leaves. The great willow-herb (*Epilobium spicatum*) is abundant about Humboldt Bay and in some parts of the Sierra Nevada. It is often seven feet high, and the flowers, with clawed petals like those of Clarkia, are over an inch across. Notice that some of the abundant pods are shedding their seeds, each of which has a bunch of silky hairs by which the wind can carry it off.

You probably know that these little mats of clover-like leaves and yellow flowers are oxalis plants (*Oxalis corniculata*), but do you know their curious seeds? The pod, which is about an inch long, contains five rows of seeds, which at a proper time are discharged through as many slits. I brush this ripe pod with my hand, and immediately it opens fire in five directions, the fusillade lasting several seconds. No, the seeds are not squeezed out by the contraction of the pod, but each seed has a white elastic overcoat, which, suddenly opening down one side, shoots the smooth seed out as you might a cherry-stone from between the thumb and finger.

Yes, that plant is called May-weed or dog-fennel. Its flowers are composite. The outside flowers only have the white leaves, the central flowers having greenish-yellow flower-cups. May-weed is rather a recent immigrant from the East, and is trying to displace a similar native plant, which you may distinguish by its flowers wanting the white leaves—all being greenish cups in a globular head—and by the pleasant odor of its crushed leaves. Botanists call the May-weed *Anthemis cotula*, and the fragrant plant *Matricaria discoidea*. The generic name *matricaria* is enough for the latter, since we have but one kind. The strife between these plants reminds me of a war recently carried on by two other plants on this ground.

You haven't asked about mallows, because everybody knows this obtrusive plant, the seeds of which are relished by goats and ground squirrels, and played with by children, who call them cheeses. A few years ago, the kind of mallows you now see could not be found in Oakland; but there was in its place a species so much like it that only a botanist would notice the difference. Just when the strife began I do not know; but two years ago I saw skirmishers of the invader, and last year the war was hotly waged in every place where weeds are allowed to grow. Sometimes an entire block would be held by one party, when the opposing force would wave defiant leaves from the next vacant block. More often it was a hand-to-hand conflict along the streets, over vacant lots, and through back yards. This year the remnants of *Malva borealis*' forces seem to have surrendered to *Malva rotundifolia*. I am glad that these rioters are both foreigners.

You see the five-lobed calyx of this mallows has three small leaves attached. These are very slender in the northern mallows, while in this, the round-leaved mallows, they are at least half as broad as long. The pinkish flowers of the former are smaller than those of this plant.

Turning down Market Street, we soon find the sidewalks gay with the little white morning-glory, or bind-weed, called in Europe the field bind-weed (*Convolvulus arvensis*). Woe be it to the gardener who allows this plausible plant to get a foothold. Like the blue-weed (*Heliotropium Curassavicum*) of San José, its underground stems bid defiance to hoe or plow.

Those pretty yellow buttons on a yellowish-green plant belong to cotula, a coast plant the world over.

The mites of green plants which cover that pool of water are called duck's-meat. It remains for you to discover whether the name is appropriate or not. If not, call the plant by the botanical name, Lemna.

You have now learned enough for one lesson. Some day we may explore the salt marsh.

THE BOSTON PUBLIC SCHOOLS.

ONE NOVELTY.

BY M. A. C.

HAPPENING in Boston near the close of the school year—a favorable time for witnessing results—I was tempted to visit the schools of the “Hub,” to see if, in my opinion, they rightfully bore the palm; and, in justice, I am forced to say that nowhere have I ever seen manifested more general excellence.

The singing throughout the department was excellent, and evinced most judicious training. The points particularly noticeable were, absence of harsh discordant tones, so common to school-room music, excellent time, delicate lights and shades that give to music its peculiar charm and general adaptation

to the sentiment. In fact, to the various renditions there was given a finish that many parlor performers would do well to imitate.

This growth toward the *really artistic* in music is what should be in every school. Aimless singing has its uses, it may be, but the fewer found for it, the better. In this, as in other things, children should be taught to observe natural gradations, and be led to experience in each year's work such advancement over the work of the preceding year as to make past efforts seem to them like child's play. If they could be made to experience in them a sense of the ludicrous, all the better, for they would then have one of the keenest incentives toward growth.

There's nothing children take less pride in than in contemplating their past short-comings; and to be made to realize that, by earnest effort, they had broken through one incrustation of ignorance would prove to the thinkers there were many more surrounding them, from which they could emerge *only* by the same means.

At the Girls' Normal School the exercises were of a very practical kind. Instead of the usual graduating essay or recitation, each young lady read a portion of an examination paper.

These papers were upon physiology, hygiene, botany, philosophy, mathematics, etc. The most original one was upon geography. In this was described, the Mississippi the Father of Waters, and the tributaries his children. Each little child-streamlet was made to very modestly approach the father and give a detailed account of its meanderings from source to mouth.

It was interesting to observe how deftly *facts* were interwoven with *romance*, and it occurred to me it was at once both a pleasant and practical way of conducting a review. Teachers must not lose sight of the fact that the more attractive an exercise can be made the more spontaneous will be the efforts of the pupils.

Just here, I give, in substance, a few remarks addressed by the City Superintendent to the class just going to be teachers.

"Get variety at any cost. Change your methods *every week* rather than fall into a rut. There's nothing more detestable than a *crank-turner* in an educational mill. There's nothing more glorious than a live worker; and remember, that in order to be successful teachers you must *yourselves be learners*. It does not matter so much what you study, only let it be something that will keep your mind thoroughly wakeful."

What teacher does not say "Amen!" to these words, and recognize in the non-application of these very principles the cause of many a failure?

The one striking "novelty" with which I met was the Girls' Industrial Department—the sewing classes. For this branch of industry each girls' school is provided with a special teacher, whose duty it is to devote her whole time to the work, and whose remuneration is equal to that of the other sub-teachers.

To the primary classes are given two lessons a week; to the others, one. These lessons consist of an hour each; are systematically conducted, and made a very important part of the school work. For these they are credited, as in

their regular studies, and every encouragement is offered for neat and rapid work.

In the first lesson, the children are each taught to make a little calico bag, which they fasten about their waists, like an apron, and use for holding thimble, thread, and other utensils.

From this simple beginning they are led to make almost every imaginable article suitable for family use, such as napkins, table-cloths, towels, sheets, pillow-slips, shams, and underwear, not forgetting to give attention to our grandmother's time-honored "needle-work," stocking mending.

Their crowning piece, however, consists in fitting and making an *entire dress*, trimming it according to the prevailing style.

For these various garments the parents furnish the material. No article is taken home until entirely finished, "button-holes and all."

In the school visited, the year's aggregate of finished pieces amounted to nearly *four thousand*. Multiply this by the number of schools, and the practical result becomes convincingly apparent.

For the *grand* result, however, we must not look merely at the amount of work completed—even though this does add immeasurably to the home comforts of the poor—but rather to the habits of industry and frugality that are thus formed, and the judgment, taste, and culture that are thus built up, which possessions are of incalculable value as aids to success in life, as every experienced person will testify.

It is by awakening faculties early that they become of value to us, for then have we life-long use of them.

What girl that has helplessly stood before some simple garment to be made—and the number is legion—that would not give worlds for the practical education afforded by the Boston schools and the modern colleges? What untrained housekeeper, with the cares of a home suddenly thrust upon her, does not *at once* become painfully aware of the incompleteness of her education, and sigh for the advantages of a "cooking school"?

Ah, yes, it is quite time we were looking after the industrial education of *our girls*; there's but little danger of "our boys" faring ill. All humanity has interested themselves in their wellbeing since the beginning of time.

But the moral aspect of this work must not be overlooked. That

"Satan finds some mischief still
For idle hands to do"

is a truism, but so *true* a truism, it will never lose force by repetition. Those girls that can so command their faculties as to earn for themselves an honest living are far less liable to fall into the snares and pitfalls of life than the untrained dependent ones.

As educators, we *owe* to our girls such development as will put each one upon an independent basis, and leave them fortified against temptation.

New movements always meet with opposition; and when, twelve years ago, the question of the expediency of introducing sewing into the public schools was agitated, it met with the customary remonstrance. There was too

little time for the accomplishment of the work already required, it was argued; it would detract from the percentages, and so on; but actual experiment has caused a withdrawal of the objections, and made, instead, hundreds of warm advocates for the cause. It is now shown that the relaxation afforded by this exercise, instead of being a detriment to the other school work, is an actual advantage—that the general standing is thereby improved.

This comparatively new cause is daily gaining strength. Letters of anxious inquiry are being received from all parts of the Union. Even conservative China has furnished her investigating committee, accepted the report, and *adopted the plan*. Thus the little leaven is spreading. How long will it be before California is leavened? Not long, we trust. A State and educational system so renowned for their many excellences should not lack this "one thing needful."

PICNIC SAM.

BY WILL CARLETON.

You youngsters who haven't heard of Picnic Sam,
Just huddle up around here where I am,
And listen sharp while memory wanders to him,
And brings out what he seemed like when I knew him.

He lived in one of those high-stretched affairs
Called tenements, up any amount of stairs;
His room there, when the tired streets he forsook,
Was just what room he crowded in and took.
Though he "lived high," he never had the gout,
And for the most part took his dinners out;
Breakfast and supper were not in his way;
His motto always was, "One meal per day";
Or rather, maybe, when you squarely met it,
"One meal per day, providing I can get it."
His garments—well, you've stood and looked, per-
haps,

At those plump, little, beaming, made-up chaps,
With nobby coats, and smiling painted faces,
The clothing dealer in his window places
(To make *meat* children envious, I suppose):
Well, Sam wasn't dressed at all like one of those.
Raiment like his no lively lad enjoys;
It had been cut for several different boys;
And, taking garments as they come and go,
He had about one suit—or nearly so.
Still, dry-goods are of life a small-sized part:
A bad coat often hides a first-class heart.
His face suggested, to the casual sight,
A bull-dog's when he's waiting for a fight;
And on it might be traced full many a streak,
As though it were not laundered once a week.
And yet his eyes were handsome, for a fact
(That is, of course, the one that was not blacked,
For he had fighting—more or less—to do);
But his well eye looked rather good and true.

You youngsters, huddle round here where I am—
I'll tell you why they called him Picnic Sam.

This young home heathen had, by day and night,
A regular first-class picnic appetite;
And, with a zeal good children stood in fear of,
Attended every picnic he could hear of.
When Sunday-schools were going to have a
"spread,"

He'd always join, a week or two ahead;
And, though no "verses" he had ever learned,
Tried to look serious like, and deep concerned,
And (if some good boy he was sitting near)
Would answer every question loud and clear.
'Twas strange, when near the time of feasting
came,

How sure a school was to get Samuel's name.
"Why," said a teacher, rather prone to scoff,
"He'll smell a picnic full a fortnight off."
'Twas strange, in different schools he ravaged round
in,

What various kinds of classes he'd be found in.
Three times he actually tried to pass
As member of an old folks' Bible class;
And once appeared (rough brick-bat among pearls)
In a small timid infant class of girls!
But in whatever company he came,
His appetite stood by him all the same.
No picnic near, in weather foul or pleasant,
But Sam and stomach managed to be present.
And when, with innocent, unconscious air,
He placed himself at table, firm and square,
With one eye partly closed, the other looking
Intently at the different styles of cooking;
And when, with savage-gleaming knife and fork,
He brought himself down seriously to work,
And marched through every dish in conquering
glory,

And ravaged all the adjacent territory,
Making the table for some distance round
Look like a fiercely hard-fought battle-ground,

A smile upon his placid face would fall,
As if life wasn't a failure, after all.

But when the exciting dinner hour was gone,
Sam always felt quite uncalled-for and alone;
Felt snubbed and frozen, and made quiet game of—
Slights that he didn't even know the name of,
But which he sensed as keenly (do not doubt it)
As if some foe had told him all about it.
He always felt by that vague feeling haunted
That hangs around folks when they are not wanted.
Because a boy is greedy, dull, and droll,
It needn't follow that he hasn't a soul;
Because his stomach craves more than its part,
It's no sign he was born without a heart;
Though ragged, poor, or coarse, or impolite,
He may resent a wrong or feel a slight.
'Tis dangerous work, this making game of folks,
Thinking, perhaps, they do not heed your jokes.
Don't fool yourself; for, ten to one, they know it,
And feel it worse in laboring not to show it.

Well, on one day particularly fine,
Sam felt himself invited to help dine
In a small grove, green, shady, fresh, and cool,
A recently discovered Sunday-school:
Which, when he'd joined, he'd muttered, "This'll
pass;

It's a swell crowd; the board 'll be first-class."
And so it was; and for an hour or more
Sam slew things as he never did before,
Wondering, with a gastronomic smile,
Where all these victuals'd been all this long while;
And made the teachers feel a great surprise
That they'd so underrated their supplies;
And his stomach could not but confess
That life to-day was one good square success.

Then, after dinner, feeling perk and smart,
He tried to make a little social start,
And frisk and frolic round, like any other,
And be accepted as a boy and brother.
But all the children shrank, with scarce-hid loathing,

From a strange lad in such imperfect clothing;
And soon Sam's face a misty sadness wore,
As if to say, "I b'lieve I'm snubbed once more."
He tried to put them under obligations
With street accomplishments and fascinations;
In turning somersaults, and hand-springs led,
Whistled and sang, danced, stood upon his head;
Even tried a friendly sparring match, till taken
Right in the act, misunderstood, and shaken
(By the strong mother of the lad he battled),
Till the provisions in him fairly rattled.
But whatsoe'er he did, discreet or bold,
It seemed to drive him further in the cold.

The grove was near a river; on whose brink
Samuel sat down, with lots of time to think,
And watch some light boats swiftly past him go,
With happy children flitting to and fro,
Content to see *him* safe and dry on land.
And he thought, "No, I ain't much in demand."

Just then a trim young miss came tripping by,
With golden hair, and more than handsome eye;
And Sam remarked, his face full of glad creases,

"That's the smart girl that scooped 'em speakin'
pieces;

I wonder if she learned hers like a song,
Or made the speech up as she went along.
She came out first, though last upon the track,
But spoke so long it held the dinner back;
Still, what she said was sweet and soothin' rather,
'Bout how 'We all are children of one Father.'
If that's 'so, she's half sister unto me—
At least, I think I'll speak to her, and see."
Then, thinking pleasantly to clear the way,
He shouted, "Miss, this 'ere's a pleasant day."
But she flounced on, more haughty than before;
And Sam remarked, "I b'lieve I'm snubbed once
more."

While, roughly sad, the boy sat musing yet,
He heard a shout, "Help! help! our boat's upset!"
And following with his eyes the fear-edged scream,
Sam saw three children struggling in the stream.
And two were rescued; one went 'neath a wave;
The waters closed above her like a grave.
She sank, apparently to rise no more,
While frantic crowds ran up and down the shore,
And, 'mid the turmoil, each one did his best,
Shouting first-class instructions to the rest.
"It's the swell girl," thought Sam, "that's made
this row;

I wonder how she likes the weather now.
I'd save her—if it wasn't too much bother—
'Good deeds for evil—children of one Father.'
I rather think she's gone down there to stay;
She can't be *yelled* up, if they try all day.
Wonder, if I should save her, 't would be bold.
I've dove for pennies—s'pose I dive for gold."
Then throwing off his coat—what there was of it—
He plunged into the water, rose above it,
Plunged in again, and came once more to air,
Grasping a pretty golden tress of hair,
And a fine, stylish, shapely girl attached,
With pale, sweet face, and lips that with it matched.
He held her up till strong arms came from shore;
And soon she raised her eyes, and lived once more.

But Sam, poor boy, exhausted, choked, and beaten
With the prodigious dinner he had eaten,
Strangled, and sank beneath the river's brim;
And no one seemed to care to dive for him.
Indeed, 't was hard from the cold waves to win him,
With such a large part of the picnic in him;
And when at last he came out with a "haul,"
The school had one dead pupil, after all.

Poor, drenched, dead hero!—in his tattered dress
Sam now was a society success.
They crowded round the dead boy as he lay,
And talked about him in a mournful way;
And from the teachers efforts did not lack
To resurrect and bring their scholar back;
They thronged about him, kept from him the air,
Pounded him, pumped him, shook him up with
care:
But useless was their toil, do all they could,
Sam and his dinner had gone on for good.

Nothing too nice that could be done and said
For this poor fellow—now that he was dead.

His casket was the finest and the best;
 He went to his own funeral richly dressed.
 They rigged him out in very pretty trim;
 A rich, first-class procession followed him,
 That reached the farthest distance up and down,
 Of any often witnessed in that town;
 And all the children, shedding tears half hid,
 Threw evergreens upon Sam's coffin lid.

Now, when you're tempted scornfully to smile,
 If a poor boy doesn't come up to your style,
 Or shrink from him as though perhaps he'll bite you,
 Because he has some points that don't delight you,
 Or think, because your "set" can do without him,
 There's nothing much desirable about him,
 Just recollect that squeamishness is sham,
 And drop a kind thought on poor Picnic Sam.

—*Harper's Young People, August 9th.*

GYMNASTICS.

IF the school-room is large, divide into two divisions, and let one division go through with the set and be followed by the other. Of course, a piano or organ is essential, but if not at hand, train some of the pupils to sing tunes by the syllable *la*. Some teachers have tunes *whistled*. Dio Lewis says that a drum, well handled, is the best for any gymnasium. A few cautions: The room must be *ventilated*; the time occupied must be *short*—about five minutes daily. The set we give will, *when learned*, require only *two minutes*; to learn well will require six weeks; no stamping must be permitted; it must be done to produce *happiness*; the teacher must master the set herself.

We must add, for those to whom this may be new, that every movement should be in answer to a *signal*, not using the voice.

The teacher while drilling the class may call out a number or letter. To facilitate, we have put a letter for each *set*. Begin and train the pupils on *a*, then on *b*, then on both, calling in a sharp tone "ready," (this is followed by *a*) then call *b*; this is followed by the movements *in time with the music*; then you call *c*, and so on. To learn all the sets will require thirty to forty drills. Then the teacher will need only to give a signal—tapping the desk sharply with the pencil once to change the set. Any set can be repeated more times than is here noted.

Any one who has never introduced these movements should do so at once. If she has never practiced them, let her learn the set herself, and then teach it. It will delight the children.

FIRST SET.

Beats of
Time.

- | | |
|---|----|
| <i>a.</i> Position erect, hands closed and on the chest. | |
| <i>b.</i> Right hand out and back four times | 8 |
| <i>c.</i> Left hand out and back four times | 8 |
| <i>d.</i> Both alternating, right beginning, then left, making right move away
from chest, while left moves toward the same, and <i>vice-versa</i> | 8 |
| <i>e.</i> Both simultaneously | 8 |
| <i>f.</i> Both hands simultaneously out and back to position, up and back,
front and back, down and back, the whole repeated three times,
making in all | 32 |

g.	Arms out, hands open	1
	Fingers snap	1
	Hands clap above head	1
	Arms in position	1
	Arms out, hands open	1
	Fingers snap	1
	Hands down at side	1
h.	Arms in position	1
	Above repeated three times, making in all	32
i. The last time, instead of arms returning to position, the elbows and wrists must be bent, the back of the fingers placed against the sides, and the finger-ends at the arm-pits, preparatory for the next.		
j. Right hand pushed forcibly down, fingers open, and back to position at arm-pit, repeated three times		
		8
k. Left hand ditto		
		8
l. Both alternating, right again first		
		8
m. Both simultaneously		
		8
n. Last time, instead of returning to arm-pits, hands on hips, thumbs back, palms in front		
		2
o.	Body motionless, head bent over to front	2
	Body motionless, head in position	2
	Body motionless, head bent back	2
	Body motionless, head in position	2
	Repeat above	8
p.	Body motionless, face turned to right	2
	Body motionless, face in position	2
	Body motionless, face turned to left	2
	Body motionless, face in position	2
	Repeated	8
q.	Body bent forward, face looking at floor	2
	Body in position	2
	Body bent backward, face looking at ceiling	2
	Body in position	2
	Above repeated	8
r.	Feet unmoved, body turned to right	4
	Feet unmoved, body in position	4
	Feet unmoved, body turned to left	4
	Feet unmoved, body in position	4
s.	Step with right foot forward	2
	Right foot again in position	2
	Same repeated	4
	Left foot forward	2
	Left foot in position	2
t. Same stepping back instead of front		4
		16

—New York School Journal.

If there is a virtue in the world at which we should always aim, it is cheerfulness.—*Bulwer Lytton.*

AMONG THE GERMAN SCHOOLS.

IT was a cold Saturday morning when, by candle-light, I swallowed my coffee quickly, and hastened out to keep my first appointment with a German schoolmaster. Even in the streets of the city you might have learned that cold weather and dark mornings never interfered with the German school system; for the weather was biting cold, and the morning as dark as any morn would be in the narrow streets of a city that lies along the same latitude with Hudson's Bay and Labrador. The city was just waking up. So early was it, indeed, that the lights still glimmered in the tall gabled houses which seemed to be still rubbing their eyes and blinking sleepily at each other across the narrow way. It was full half an hour before sunrise; and yet, on all sides, great doors were slamming, and the children were pouring out in swarms that never were matched except in Hamelin Town when the piper played. They ran in such throngs along the street that the air rang with the clatter of their little wooden shoes.

It was a lively sight. Blue-bloused peasants with baskets on their heads; rosy-checked milk-maids shouting at the dogs which tugged their heavy carts; bread-boys, circled by their short blue skirts, distributing the little cobble-stone "*brodchens*" or rolls—the only solids of a German breakfast; squads of soldiers tramping to and from their watches, and singing as they marched along; but everywhere, among peasants and milk-maids, bread-boys and helmets, on sidewalk and thronging through the street, were the hosts of school children. You could not mistake them if you would, for knapsacks were strapped upon the boys, and satchels went dangling along with the maidens.

The children were of all shades and sizes, from sturdy boys and girls, already near the end of their schooling, down to dainty bits of flesh and blood that seemed to have just tumbled out of morning dimity and cradle blankets; from warm furs and quilted hoods and blessed little leggings that covered even the shoes, down to bare heads and bare arms of wretched children who went shuffling and scuffling along in their loose wooden sabots.

"Half-past seven A. M., midwinter!" I said to myself, "How would our children like such discipline as this?" But this is the law, and summer and winter, dark or light, every German scholar in the "volk" or common school must be in his seat at just eight o'clock. American children would raise a mutiny; but Germans are submissive souls, never grumble; although, as I walked along, I saw many a little fellow who had slept too long, and showed evidence of it by buttons that looked wistfully across to button-holes, and by the remnant of his morning meal clutched in his fist and munched spasmodically as he shivered through the streets.

An easy and almost irresistible matter it was to follow the wake of these tramping little regiments to the school, which soon appeared—a long, black, brick structure, sandwiched in between respectable dwellings, and not a foot of space on either side of it. I rang the bell, and while hundreds of children hustled past me with sidelong wondering glances, an old lady appeared and

begged to know my wants. She was the "Frau-Castellan" of the school, and lived with her family on the ground floor of the building. The light yet shone from her little room as I peeped within, and the lace curtains and red table-cloth gave it an air of comfortable neatness.

She showed me at once to the head master's apartments, the second habitation of every German school-house. Here he has his office or study, his living room, kitchen, parlor, and sleeping chambers; and here, perhaps, you find him in the midst of his family, which never is small in Germany, and happy, perchance, among his books and the restless whining of a teething infant. In many cases you find that he speaks English, and French he always speaks; but better than both you find him, like the most of Germans, possessed of a hearty politeness, and shining with such sincerity that you feel yourself at ease immediately.

Without delay, for the bell had struck eight, he led me through courts and corridors, and stood before the door of Class VI. for boys. Knocking, the door was opened and we entered. I was not prepared for what I saw. Instantly, as we stepped within, as if the hinges of that door were mysteriously connected with all those little bodies before me, the whole class rose like a unit to their feet, stood with folded arms, and greeted us with "Guten Morgen!" "*Zwei!*" shouted the teacher, and with a precision which might have done credit to a regiment of veterans, *click!* went eighty little men down upon the seats again. Conversing a few minutes, the head master turned to go. Instantly again the school was on its feet. Bidding us good morning, he turned toward the class as well, and bowing, as if to his superiors, he said, "Good morning, little scholars."

"Adieu, Herr Lehrer!" they all replied, and at another signal they set with folded arms and awaited orders like a regiment.

It must be remembered that these boys were between six and seven years old; that they had been under training for about five months, and that in this room the school life begins. They enter at the age of six, rise year by year through class after class, until they have received a schooling of eight years' duration. It may be more. If the boy is lazy, he remains two years longer; but visions of the army are passed before the mind of every scholar, and it takes him only a short time to understand that his time of military service depends wholly on the standing he has in school and the examination he passes at the end. "One, two, or three years' service, just as you like," says the teacher; and every boy jumps to his feet and shouts, "I'll get a one-years' service if I work twenty-four hours a day." No marking system is necessary in the face of such a marvelous incentive as this. Every boy strains to the utmost to reach the one-year service, and no greater disgrace can befall a scholar of the public schools than to be hustled into a three-years' military course along with the peasantry and the coarsest blood of his land.

The school began. Eighty fat-faced urchins sat before me in rows of five to a bench, each bench or desk being so constructed that the interior could be plainly seen by the teacher in front, and many a hidden plot nipped ruthlessly in the bud. The teacher was not a grammar school girl graduate, not some

capricious maiden, weary of shop life, or waiting for a "long path" to open; but a large fine-looking gentleman, about thirty years of age. He was well educated, conversed with me in French, and the teacher of the youngest class in the public schools, calling to my mind the strong words of Dr. Holland, that no man is too good or too great to teach a class of little children."

Bidding me to be seated, and handing me what he called an "hour-plan" of studies, he stepped out before the school and began the lesson in religion. It was the first lesson of the day, although not necessarily the first on all days; for as I conned the plan I saw religion marked for four days a week, at different hours.

"Now, my children," said the teacher, "who made this world of ours?"

"Beloved God," they cried.

"And who is God?"

"A spirit."

"And where does he live?"

"There," and eighty little fingers pointed upward.

"What did he make first?"

"Light."

"And where does this light come from?"

"The sun."

"And who saw the sun this morning?"

"Nobody," said a positive youngster in the front row.

"And why?"

That was too much for them, so the master explained it.

"And now, did any little boy with sharp ears hear the birds sing as he came along?"

"No! no!" they answered.

"And then, when one inquisitive urchin asked if they all froze to death, this teacher caught up his question, and told them how God's care would brood over and keep the birds till spring came back again.

In this manner he led them on—a class of eighty boys—keeping them one long hour, and digressing as skillfully as an old diplomatist to tell them stories, and keep their eyes all sparkling with interest.

It was nothing less than a Sunday school planted firmly in the midst of the German system of education; the infant class of a study which, as I went from grade to grade, grew constantly into more importance, until, when they left the school, children found themselves fairly grounded in religion, and possessing an excellent knowledge of Bible history. And throughout the whole hour of this morning lesson I looked in vain for a pair of eyes that drooped or a face that looked listless. Not a muscle flagged, not an eye lost sight of the master, not an ear failed to catch the simple stories he told so charmingly. The secret of it may have been that in German schools religion is not a careless exercise, tossed off in half a dozen minutes, and made the irksome beginning of daily duties; not a side affair to shirk, or slight, or play with; but rather an earnest lesson, a solid part of the school curriculum, taught like other branches, studied like other branches, and claiming, like other branches, its undivided hour of recitation.

The hour was finished, and a recess followed. Such is the wisdom and carefulness shown for the little children. At the end of each hour out they all run to a play-ground, windows are thrown open, the fresh air comes rushing in, and a romp and tumble of five or ten minutes brings them back panting, fresh, and rosy-checked to the school-room again.

The lowest classes are detained in school through two sessions a day, each session being two hours long, and even this broken by a recess. It is long enough; and the memory of my primary school life of six hours a day, half of which was the refinement of misery, makes me shudder at this late day. The Germans have discovered how to make the primary school a pleasure for the children. They come at 8 o'clock, are kept continually busy until 10; come again at 2, and leave at 4. No lessons are studied in school, very few, indeed, at home. Hardly any text books are used, and those of the very simplest nature. Not a book is ever opened for silent study during school hours, and not a minute is lost in either session by teacher or pupil. Most of the instruction is oral, or by means of a blackboard. These scholars of six summers had no writing books, yet they were all good writers; they had no grammar, yet at this age they were learning to construct their language properly, and build words into sentences; they had no singing books, yet they sang the songs of Mozart and Mendelssohn.

And the most striking feature of the whole system is, that from the minute a scholar enters the school-room until he leaves it, he finds himself reciting. If the lessons are such that they cannot be learned at home, then study and recitation are combined in one. If studying is required, it must all be done out of school; and the result is, that every moment of school hours is consumed in recitation, and consequently the one great source of idleness and weariness at once removed.—*Boston Advertiser*.

HOW LONG SHOULD WE SLEEP?

THE vital processes of man, like those of all his fellow-creatures, are partly controlled by automatic tendencies. Some functions of our internal economy are too important to be trusted to the caprices of human volition; breathing, eating, drinking, and even love, are only semi-voluntary actions; and during a period varying from one-fourth to two-fifths of each solar day the conscious activity of the senses undergoes a complete suspense; the cerebral workshop is closed for repairs, and the abused or exhausted body commits its organism into the healing hands of nature. Under favorable conditions, eight hours of undisturbed sleep would almost suffice to counteract the physiological mischief of the sixteen waking hours. During sleep the organ of consciousness is at rest, and the energies of the system seem to be concentrated on the function of nutrition, and the renewal of the vital energy is general; sleep promotes digestion, repairs the waste of the muscular tissue, favors

the process of cutaneous excretion, and renews the vigor of the mental faculties.

The amount of sleep required by man is generally proportionate to the waste of vital strength, whether by muscular exertion, mental activity (or emotion), or by the process of rapid assimilation, as during the first years of growth, and during the recovery from an exhausting disease. The weight of a new-born child increases more rapidly than that of a eupeptic adult enjoying a liberal diet after a period of starvation; and, though an infant is incapable of forming abstract ideas, we need not doubt that the variety of new and bewildering impressions must overtask its little sensorium in a few hours. Nurslings should therefore be permitted to sleep to their full satisfaction; weakly babies, especially, need sleep more than food, and it is the safest plan never to disturb a child's slumbers while the regularity of his breathing indicates the healthfulness of his repose. There is little danger of his "oversleeping" himself in a moderately warmed, well-ventilated room. Never mind about meal-times; hunger will awaken him at the right moment, or teach him to make up for lost time. Three or four hours nursings in the twenty-four are enough. Dr. C. E. Page, who has made the problem of infant diet his special study, believes that fifty per cent. of the enormous number of children dying under two years of age are killed by being coaxed to guzzle till they are hopelessly diseased with fatty degeneration.—*Dr. Felix L. Oswald, in Popular Science Monthly for July.*

PRACTICAL EXERCISES IN GEOGRAPHY.


BY JOHN SWETT.

THE attempt to learn too much is a common fault in the study of geography.

After the pupils have "gone over" the book-work, it is a good plan to settle down on a few simple statements to be *remembered*. For instance: After taking the ten pages of Pacific Coast geography in the adopted text-book, simmer it down to a composition exercise. The teacher must prepare this condensed composition, and read it to the class, requiring the pupils to reproduce it.

We submit the following as a model for similar exercises on other parts of the book.

THE PACIFIC STATES.

 Require an abstract from memory.

Situation.—The Pacific States, California, Oregon, and Nevada, are situated in the western part of the United States, on the Pacific slope.

Mountains.—There are two great parallel mountain ranges, extending north and south: the Rocky, and the Sierra Nevada. There is also a smaller chain, called the Coast Range. As a whole, the surface of this section is mountainous.

Plateaus.—Between the Rocky Mountains and the Sierra Nevada there is an elevated plain, called the Pacific Highlands, or the Great Central Basin.

Rivers and Lakes.—There are two great rivers, the Columbia and the Colorado. There are no large lakes.

Climate.—The rains in this section are scanty, compared with the rains of the eastern sections of our country. The seasons are two—a wet and a dry season. The climate is milder than in corresponding latitudes on the Atlantic slope.

Mining.—This section is rich in mines of gold and silver.

Agriculture.—The chief agricultural products are wheat, wine, wool, and live-stock.

Population.—The settlement of these three States is comparatively recent, and they are thinly settled. The population of all these does not exceed one million.

Cities.—The chief cities are San Francisco, Portland, and Virginia City.

PEDAGOGICAL RULES. (DIESTERWEG.)

TRANSLATED BY HENRY SENER.

I. GENERAL.

1. Teach by natural development.
2. Conform to the degree of development of the growing man or woman.
3. Start your instruction from the educational standpoint of your scholar; advance from there steadily and without interruption, and make thorough progress.
4. Do not teach anything which cannot yet be valued by the scholar at the time you teach it, and do not teach anything which he cannot value afterwards.
5. Teach and use objects.
6. Advance from near objects to remote ones; from simple matter to compound matter; from easy to harder things; from the known to the unknown.
7. Do not teach the whole of a science, but teach its elements.
8. In every branch of instruction try to interest your scholars in many directions; connect practice with theory, and practice what you are teaching until it has become itself a new basis, a new starting point.
9. Take care that your scholars keep everything you have taught them.
10. Do not cram, do not educate for one single end, but lay a broad, solid foundation for the thorough education of men and women that are to become a nation.
11. Make work a *habit* with your scholars; not only make them like it, but try to make it their second nature.
12. Pay due regard to your scholars' individuality.

II. INSTRUCTION.

1. Divide the matter to be taught in conformity with the grade of development of the scholar.
2. Above all, teach the elements thoroughly.
3. In explaining derived formulas, try to derive them yourself, and make your scholars derive them from the primitive formula.
4. Divide all matter into divisions of different grades, and subdivide the same.
5. Point out in any of the divisions some single parts of a division of a higher grade, and even elaborate a portion of it without interrupting your course, for the sake of interesting your scholars.
6. Divide the matter in such a manner that, whenever possible, the next following grade has to go over the work of the preceding grade again.
7. Connect things that are related to each other.
8. Advance from the thing itself to its formula: not in the opposite direction.
9. Adapt your method of teaching to the particular nature of the subject.
10. Conform in your instruction with the latest discoveries of science.

GEOGRAPHY.

BY MARY E. BADLAM.

I.

I. SIZE of the Earth.

Let the children pretend to take a walk through the streets or roads around the school, and think how long it would take them; then think of the adjoining streets, and of others adjoining these, and the space covered by them, until they have some idea of the size of their own city or town, and the time it would take them to walk through it.

Then lead them to talk about other towns and cities joining theirs, and of far-away cities of which they have heard, as large and oftentimes larger than their own, and they will readily see that the earth must be *very, very large* to hold all these.

II. Division into Land and Water.

Question them about what cities are built on, and you will get various answers; as dirt, land, earth.

Let them describe the land.

It is solid; always the same; never changing; immovable.

Let them in imagination take a walk over the land, until by and by they come to a place where they can go no farther; where they cannot take another step. (If they cannot think readily what it is, tell them what we see upon it.)

From their own knowledge let them describe it, and then compare it with the land.

The land is *solid*; the water is *liquid*. (If they do not know the word *liquid*, give it to them.)

The land is immovable; the water is always in motion. The land is always the same; the water changes in appearance every minute.

Show a picture of land and water, and let the children decide which is land and which is water, and give their reasons.

III. What we *obtain* from Land and Water.

1st. From the outside or *surface* of the land:

	<i>Plants</i>	<i>and</i>	<i>Animals.</i>
For	Food,		Food,
	Clothing,		Clothing,
	Fuel,		Light,
	Building materials.		Labor.

(Let them give examples for each one.)

2nd. *Under* its surface: Building-stones, metals, and coal.

3rd. From the *water*: Fish, salt, sponges, and coral.

IV. *Shape* of the Earth.

Question them about what they can see in the sky, (sun, moon, and stars) why they look so small, and what they think the shape is.

Give the words *sphere* and *spherical*; globe and globular.

Let them mention other spherical objects.

Tell them the earth is nothing more nor less than a star; and perhaps, if we could stand off and look at the earth, we should find it shining and giving light just like a star.

Throw a ball in the air, and let them imagine how it would look if it stayed there with the air all about it.

Lead them to think of toy-balloons, and how they look sailing through the air. This is the way with our earth: it is like an immense ball held or suspended in the air.

Show a globe, and impress on the children's minds that it shows the *shape* and not the *size* of the earth.

Show, again, a picture of land and water, and then show land and water on the globe. Keep them using the globe until they can point to either readily.

V. *Air* around the Earth.

Let them tell what is around the earth, and why we need it; that it is necessary to life; and then tell them the higher we go the thinner it is; and if we go high enough, we get to a place where we cannot breathe; where we would die.

Tell them that wind is nothing but air moving rapidly, or air in motion. Speak about the clouds collecting the moisture, and then sending it down again as rain and water upon the earth.

VI. The Earth a *magnet*.

Show the children a magnet, and let them use it, noticing how the magnet draws or attracts the steel, or anything with steel in it.

Let anything fall from your hand; throw a ball into the air, and see how soon it falls to the ground.

Tell them the earth draws the ball toward it just as the magnet drew the steel, only with a great deal more force.

It is a magnet, and by its power of drawing or attracting keeps us from flying away and leaving the earth altogether. If it were not for this power, we would not be able to touch the earth at all.

VII. Division of the Land into Continents and Islands.

Using the globe again, let the children point to land and water.

Let them point out the *large* bodies of land, and tell the number.

Give them the name *continent*, and let them give the definition from its position on the globe. "A large body of land *entirely* surrounded by water."

(All these points should be written on the board as soon as they are obtained.)

Lead them to notice other bodies of land much smaller, and compare them with the continents. They will find they are entirely surrounded by water, like the continent, but are much smaller.

Give them the name *island*, and let them give the definition, "A small body of land entirely surrounded by water."

Show a picture of an island.

VIII. The Ocean.

Let them point to the water on the globe, and tell how it is situated with regard to the land; that it is *around* the land, or *surrounds* it.

Question them about the taste, and why we do not drink it.

Let them tell the name it is called by. Then get the definition from them, and write it on the board. "A great body of salt water that surrounds the land."

Let them give again some of the uses of the ocean.—*The Primary Teacher*.

A METHOD OF TEACHING ADVANCED READING.

BY GEO. A. RICHARDSON,
[El Dorado County.]

ARTICLE No. II.

I HERE give some of the written work handed in by pupils in my school. The best work is not selected; but some errors are transcribed simply to show that there is abundant chance for improvement by the system of requiring words to be used. The words the pupils use are inclosed by quotation-points.

1. It was a sad "spectacle" to see those men fighting.
2. The "column" marched out bravely to face their enemy.
3. There was many "carcasses" on the plain.
4. To love God should be a strong "credence."
5. The armys fight in "modern" years with cannons.
6. The "troopers" rode very fast.
7. The man "dismounted" his horse.
8. The man was a "murderous" vilan.
9. The soldiers bought a great many "lancers."
10. The smoke settled over the "batteries"

"ARMIES AND BATTLES.

"An army is composed of about 400,000 men. There are small armies, called regiments, which are composed of about 1,000 men. Troops consist of about 100 men. So in a large army there would be about 400 regiments and 4,000 troops. Battle is when the armies get in the field and begin to fight. Large armies build forts and redoubts for protection. Forts are generally built of sand, because if they are knocked down by the balls, they can be easily built up again. Redoubts are generally built of stone, behind the fort. Armies have batteries for the canons to rest upon. In ancient times people used to fight with battle-axes and spears, clubs, swords, etc. But since, people have become civilized, and fight as I have mentioned."

QUESTIONS.

1. What is meant by "its so-called better part, discretion"?
2. What is meant by "according to the numbers of continental armies"?
3. What is meant by "cover the retreat"?

These exercises indicate the vagueness of the average pupil's mind as to the meaning and use of many terms in an ordinary lesson, even after receiving the benefit of a drill on it. They afford so many opportunities of discovering "what the child doesn't know," that I think their value is acknowledged by experienced teachers. Some of our school readers contain exercises similar to those I describe, but in most cases not enough work of the right kind is given. Simply following the preparatory work at the close of the lesson is much better than no drill at all; but it is a poor substitute for the thorough questioning of an able teacher, who is determined to discover what the children fail to understand, and to see that they have, at least, a better understanding of words and their uses when the lesson is finished than they had when it was begun. Inexperienced teachers will have trouble at first in getting classes to work nicely, where they have never received any training of the kind I describe.

Not many pupils know how to use a dictionary so as to obtain any information; and of course where this knowledge is lacking no work can be well done. At first much trouble will arise in getting reasonably clear explanations of the words used. Children unpracticed in this work will hesitate, and sometimes refuse to give explanations, even where they have a fair knowledge of

the meaning. Sometimes they are timid, but usually they think that a set form of words is required, and that an explanation is not correct unless it sounds like the definitions of the dictionary. A little patience and practice will overcome this trouble; and my experience is, that children soon become interested and like the work. The reason why children hate learning definitions is because they do not understand them. Care that children are not required to memorize and repeat words that they do not understand will be a great element of success. In my own teaching, I prepare children for this kind of work by requiring them to use and explain words as soon as they are able to read. It is interesting and useful work for small children, and they soon acquire a readiness in the choice of words and the composition of sentences that I have not been able to secure in any other way.

It is not often the best plan to follow the reading lessons of an advanced reader in their exact order. Easy lessons and easy works should be studied at first. Selections containing clear, simple language on topics easily comprehended by children should be examined before any attention is paid to the extracts from writers like Milton, Shakspere, and Emerson. Of course classes should study these more difficult pieces at a later time, explaining the many elliptical expressions, obscure allusions, and figures of speech; but this should not be required at first.

In conclusion, I would urge the importance and desirability of some kind of training on the use of words in our schools. As a rule, children that have not acquired a taste for miscellaneous reading labor under a disadvantage, in not being able to use or understand many words of the language. Those living in cities have better opportunities of hearing many words correctly used than those inhabiting rural districts. If teachers will note the nature of the conversation that most children ordinarily listen to, and the number and character of the different words used, they will have no difficulty in understanding why it is so hard for the child to understand and appreciate his reading lesson.

The language of literature and the language of the common people are not alike; and a child who listens only to conversations, expressed in a few words many times repeated, and on a narrow range of topics, cannot be expected to understand the language of most writers, unless he is trained by hearing the new expressions used, and by using them himself.

Let a teacher make a list of a few of the more uncommon words in the school reader, and watch everybody he meets in the district to see whether they are used or not. The result will convince him that few words are used by the masses. We are often accused of teaching "words, words, words," in the public school; but the true force of this accusation lies in the fact that we frequently teach words without their uses. The limited knowledge that children have of the true signification of language interferes with their progress in every study pursued in our schools. Pray, how are children to understand the language of a text-book, or the explanations of a teacher, if they contain, as they invariably do, words which the child has heard at no other time and in no other place.

THE C. L. S. C.

This department is under the editorial charge of Mrs. M. H. FIELD, San José, to whom all communications relating thereto must be addressed.

THE C. L. S. C. ASSEMBLY.

JUST when summer heats were driving people from the interior to sea-side or mountains, and just when the tired teacher was able to bid his annual good by to the weary round of school work, and was longing to flee away to some quiet spot where he could himself turn scholar for a little while in the great school of nature, then did the C. L. S. C. spread its usual alluring feast beneath the cypresses and pines of Monterey. "Pacific Grove" is evidently destined to be classic ground. It may not rival Plato's immortal grove, but our "Academe," we are sure, will be "no ignoble dream." Summer schools of philosophy and science are destined to a growing popularity, and we look for the time when the whole Pacific Coast will feel a mighty impulse Monterey-ward at the time of each annual gathering there of the C. L. S. C.

The Assembly of this year opened on the 29th of June with a goodly number of "friends in council." Prof. H. B. Norton of San José took the place of the absent president, and did manful service during the entire meeting. His opening address was most appropriate and beautiful. He is an advanced thinker, and when he announced for his theme "The Service which Science has rendered to Religion," we prepared for an original and forcible handling of the much-discussed relationships of these great subjects, nor were we disappointed.

After a day or two the Assembly settled down to steady but delightful work. Classes were formed in botany, biology, etc., and note-books, flower-presses, vasculums, microscopes, and all sorts of scientific paraphernalia became noticeable accompaniments of every stroller by the sea. Competent teachers gave lectures and familiar instruction in all departments of study; while evening lectures of a more popular sort called in large and attentive audiences. Especial notice should be given to the interesting lectures of Prof. Moses of the State University, on historical subjects; Prof. More of the State Normal School, on astronomical and historical themes; Dr. Anderson of Santa Cruz, on marine botany; Prof. and Mrs. Lemmon of Oakland, on botanical subjects; and Prof. Keep of Alameda, on conchology. Dr. Wythe talked in his quiet, charming style for an hour or more each day on his favorite science of biology; and when President Stratton came, he brought his full quota of instruction and entertainment.

There was on exhibition constantly a fine microscope of Dr. Wythe's, with marvelous bits of tissue or fibre of various sorts spread out beneath the astonished eyes of any observer; also a telescope with which the great comet, then at its full brilliancy, could be admiringly studied.

All the picturesqueness of tent-life, yet all the comforts of the town; all the beauty of the forest primeval, yet all the advantages and pleasures of social life—combined to make the fortnight's experience one of unalloyed enjoyment.

The Assembly closed after re-electing their former officers as nearly as possible. Miss Washburn leaves for an Eastern sojourn of six months or a year, and so the secretaryship passes into the good hands of Miss M. E. B. Norton of San José, to whom application may be made for circulars and other information.

The California students will this year synchronize their course of reading with that of the Eastern society, and will take the *Chautauquan*, a paper published monthly at Meadville, Pennsylvania, containing most of the needful reading. The monthly course of study will be given in this journal; that for October and November is as follows: Outline History of Art (De Forest); A Short History of Art (De Forest); Mosaics of History, and Laws of Health, both of which last-named books will be found in the *Chautauquan*. The books on art can be obtained of the Methodist Book Depository, 1041 Market Street, San Francisco; or from Waldron & Stowe, Chicago; or Phillips & Hust, New York.

It is hoped that there will be a large increase of membership to the society this year. The price of membership is reduced to fifty cents per annum—the least possible sum with which expenses of printing, correspondence, etc., can be defrayed. Let our teachers all join the society, and induce their older pupils, with parents and friends, to unite in a local circle, and the best possible results can be safely promised in that growth and quickening of mental activity which is the one thing needful in every school.

EDITORIAL DEPARTMENT.

HOW TO MAKE A GOOD COURSE OF STUDY.

HOW IT IS MADE.

“Eye of newt and toe of frog,
Wool of bat and tongue of dog,
Adder's fork and blind worm's sting,
Lizard's leg and owl's wing.”

THIS ancient recipe is not unlike the constituents of the ordinary course of study in our common schools. The witches around the caldron, modernized, may be, not inaptly, compared to the conventional superintendent and deputy, one or two principals not too young, and a few school directors; for a caldron, read punch-bowl; the magic circle is the blue circling smoke of Havanas.

The early evening hours pass quickly in social chat and bright repartee. It is indeed "a feast of reason," and a flow of bowl. At length some one exclaims, "How about that course of study?"

"Oh, bother the course of study!" is the reply. "Let the deputy and the principals get it up."

So, with a few suggestions more merry than wise, the deputy and half a dozen principals concoct a mixture, and label it "Course of Study."

Such a course is like a great piece of machinery manufactured in sections in different parts of the earth. The sections examined separately look beautiful and complete; it is only when they are put together that they are found out of proportion, ill-fitting, immovable. So with the usual course of study: on paper it reads well, it appears fully in accord with reason and the best educational requirements. But in practice, what are the facts? It is unsymmetrical, and not well arranged. The instant the class-teacher begins to work under it, he finds it the source of endless friction. Complaints pour in upon the superintendent and school directors; the newspapers take up the plaint and wail about cramming and too many studies. Then amendments become the order of the day, until in a few months, the course is the veriest piece of patchwork imaginable.

In criticising the ordinary method of making a school curriculum, we have no special locality in mind. It is true that for the large amount of money annually expended for the San Francisco schools some better results might reasonably be expected than from a most backwoods county of California. But, unfortunately, the same methods have prevailed in this State for years. The old State Board of Education, from the nature of its constitution, elaborated a State course of study entirely from its own inner consciousness, and transmitted its devices to its successors, the county boards. The old State board was not to blame. The law compelled them to do a great deal of work for nothing, and gave them no real authority to enforce a course of study, even when they took the trouble to elaborate one. They contented themselves with enforcing the use of the State list of text-books and a liberal observance of the course they suggested.

HOW IT SHOULD BE MADE.

Let the class-teachers of the lowest grade be convened by the superintendent. With the text-books for the grade before them, and guided by their own practical experience, let them make out the plan of one year's work. They should indicate clearly the amount of work that can be done thoroughly and well by the average mind in the time allotted. They can show at just what point of mental advancement the ordinary learner may be found at the end of one year of school life. In the same manner let the teachers of the next higher grade, and the next, and so on, build on what has already been done; and indicate how much of each subject can profitably be taken up and assimilated. Where new studies are introduced throughout the course, due allowance will be made for them by the curtailing of other branches.

In matters of this kind, teachers are painstaking and conscientious. The several class-teachers will feel the responsibility incumbent on them, and not undertake too much. On the other hand, a laudable ambition will incite them to make the plan for their year's work well up to the capacity and capabilities of their pupils.

These suggestions, we believe, are feasible. They are, at all events, in accordance with the now generally accepted doctrines, that all improvement springs from within, and that the best government is the result of the desires and necessities of the governed.

THE DEATH OF THE PRESIDENT.

PRESIDENT GARFIELD is dead. The heart of the Nation tolls with solemn, muffled beats his funeral-knell. Nay, more than that. Humanity from stately England, vigorous with the ever-increasing strength of Saxon civilization, to *effete* China, reposing on the laurels of a long-forgotten past, mourns with the keenness of personal loss. Nearly a century ago Edmund Burke wept the decay and downfall of chivalry. The character of James A. Garfield proves how unfounded was the English philosopher's regret. Has not the sky a more somber tint? Are not the clouds darker, more leaden-hued? At the heart there is a dull tugging pain, that only those who grieve without hope can realize. Men speak to men with bated breath; even the newsboys offer their wares in unwontedly sober fashion.

There is withal that inability to comprehend the presence of death that shows his benumbing influence has extended from the bed of his victim to all who feel for that victim's agony. City and town and hamlet and isolated farm-house bear the trappings of woe; business is suspended, and the crape over each man's door bears the announcement that a dearly beloved brother has passed from earth.

Modern history offers no parallel for this world-wide grief, this spontaneous outburst of human sorrow on the death of a ruler. Men are akin, we see, after all; the heart beats the same, no matter what the color of the skin. Is it not here we may find the black cloud's silver lining? Not in the grief, universal though it be, but in the half-unconscious homage which underlies and actuates the world-wide mourning. It is a tribute to CHARACTER. James A. Garfield's life is a model, not only for his own children, but for the children of countless generations; for all who can read the history of his early struggles, of his patient energy, his earnest industry, his patriotism, his success through honest work, his heroic fortitude and saint-like resignation when the dread hour of the dim unknown drew nigh. So his death is an answer to the pessimist, and a beacon to every toil-worn and storm-tossed wanderer on life's restless sea.

There is One who died that all might live. So it almost seems that James A. Garfield died that men might know themselves better than had been imagined. We can not be growing worse, for from such intense appreciation of truth, virtue, valor, honesty, and manfulness must come a longing to be also "like unto this." The world respects James A. Garfield because he was a good son, a good husband, a good father.

Will not all men who acutely feel this respect likewise try to be good sons, good husbands, and good fathers. James A. Garfield was a temperate man. Will those whose hearts commend his temperance not feel their hearts leading them to imitate his virtue? So with his unselfishness, his moral heroism, his physical fortitude. Those in whose hearts responsive chords are vibrated, when they recognize these qualities, are well on the way to a higher life.

As we write to-day, his body is being consigned to its kindred dust. But the world has canonized him, not as saint or martyr, but as the ideal American—the typical man.

What more can history say of him than by his life was he honored, by his death glorified.

SUCH STUFF AS INQUISITORS ARE MADE OF.

SAN FRANCISCO is having a trial for *heresy*. A lady, Mrs. Susan B. Cooper, a communicant of the Calvary Presbyterian Church and teacher of the Bible-class in the Sunday school, is accused by an elder of that Church, Mr. J. B. Roberts, of having taught doctrines heretical and contrary to the Confession of Faith of that Church. The gravamen of Mr. Roberts's accusation is, that Mrs. Cooper has taught that certain passages of Scripture are not to be literally construed; that the final resurrection is not a resurrection of the material body; and finally, *horribile dictu*, that Mrs. Cooper has been guilty of occasionally attending the Unitarian Church, and of asserting her belief in the salvation of the virtuous and beneficent, no matter what their creed.

In the trial it was shown, what indeed the community has long known, that Mrs. Cooper is a woman whose actions have been closely modeled after those of the Master. Unselfishly and with her whole soul she has been identified, has been the leader in all the movements tending to the amelioration of the mental and physical sufferings of her kind. Through her energy, thousands of little hearts have been gladdened; hundreds of desolate homes have been brightened by the sunlight of the Kindergartens established by her amid the very purloins of vice. Her Bible-class numbers from three to four hundred attentive students, whose interest has been maintained for years.

We give here hardly a hint of this woman's life and work. All she has accomplished has been done quietly and without self-seeking. To the credit of Calvary Church, be it said that her pastor, Dr. Hemphill, and her governing body sustain Mrs. Cooper, *i. e.*, dismissed the charges presented against her. But her accuser was not satisfied, and appealed to the Presbytery. He claimed to be actuated by no personal spite or malice, but simply to labor for the glory and advancement of the true faith. History shows us many such examples of single devotion. Such faith went up to God in the smoke of burnt offerings from countless *autos de fés*. It approached the throne of Infinite Love with endless agonizing wrung from racked myriads in the dungeons of Spain and Italy. Such holy fervor was vented amid bloodhounds' bayings ere they dragged the dusty converts to the foot of the Mission Cross in Mexico or Peru. The world has had one thousand years of knowledge of Mr. Roberts's love for his Maker. Thank God, such history now is only read, not made!

One charge this gentleman makes against Mrs. Cooper is, that she declared her preference for living in hades (new version) with Bob Ingersoll, rather than in heaven with Roberts. It may be a startling proof of a degenerate age, but we are satisfied, from the general drift of the testimony, that a portion of the Presbytery even heartily sympathize with Mrs. Cooper's taste.

Since writing the above, the case has been argued, mainly by Mr. Roberts, and submitted. The Presbytery, by a small vote—nine to eight—decided against Mrs. Cooper, and order the session of Calvary Church to reverse their previous judgment in her favor. This they will undoubtedly refuse to do, a step which may compel an appeal to the Synod of the Church.

Even as the matter stands, we consider the decision virtually a victory for Mrs. Cooper. In the Presbytery there are fifty-one members, thirty-four of whom are within easy reach of this city. There were but twenty-one present, four of whom either abstained from voting, or were willing to condemn her only in part. So but nine votes could be mustered up to decide that Mrs. Cooper's faith and

works are not sufficiently in accord with Christ's teachings to secure her fellowship in his church. It may be well to mention here, for the honor of Presbyterianism, that among these nine, there are not more than one or two representative names.

Certainly, here is light and progress from the time when John Calvin watched the red glow of the flames which wafted heavenward all that was mortal of his great rival, Servetus.

REVIVING INTEREST.

OUR correspondence on educational subjects has greatly increased this month. We are glad of this; it is a sign of rapidly reviving interest. We have received also a number of communications in regard to changes of teachers and school improvements. These items will be found under the head of "Educational Intelligence," in the next number of the JOURNAL.

We hope for a further increase this coming month. We want once more to hear from those of our old friends who have so often made the pages of the JOURNAL fresh and interesting.

There are but two more numbers in this volume. Let those numbers be the best bearing our imprint.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, EDITOR.

MEMBERS OF COUNTY BOARDS PREPARING CANDIDATES FOR TEACHERS' EXAMINATIONS.—The Legislature does not make all the laws which members of society, whether in public or private life, are bound to observe and obey. There are, for example, rules and laws of propriety—the fitness of things—which must be as carefully observed and as strictly obeyed, if one would retain the respect and confidence of a community and be above suspicion, as those which appear upon the statute books.

When the penalty for a violation of these laws or rules is visited upon the offender only, and affects no one else, it is bad enough, of course; but it is then largely his own business and affair. When, on the other hand, others than himself are affected, and more especially when any great public interest is involved and liable to suffer, such offenses cease to be mere personal matters, and form a legitimate subject for competent public criticism.

Now, there is nothing in the school law, or any other enactment by legislative authority that I know of, to prevent a member of a county board of education from preparing candidates for teachers' examinations. It is, however, so clearly a violation of that other code of laws of which we have been speaking, that one could be almost led to doubt that there should exist any necessity for referring to it in this department of the JOURNAL; and yet it is in response to several communications upon the subject that this item appears. The following

is from one of these communications, dated September 10th. Speaking of the meeting of the State board to be held on the 17th of that month, the writer said: "Whether it would be advisable to make any suggestions as to the impropriety of members of county boards taking pupils specially for preparation for county examinations of teachers, I know not—certainly if your board does not. It seems to me highly important that you should take some action upon the subject, if in no otherwise, then by energetically giving your views upon the same through the JOURNAL; for it seems to me, that here especially is one of the weakest points in our present system." The writer is a very intelligent gentleman, and an earnest and efficient school officer, being himself a member of a county board; and, while he does not particularize or go into details, it is fair to presume, that, in what he says upon the subject, he is not indulging in mere theoretical speculations concerning a supposititious or possible condition of things; but, on the contrary, that he is prompted by his observations of existing cases.

Let it be understood right here, that no reference is had in this article to teachers employed regularly in normal schools, or in institutions of learning in which, among others, there is a normal department; but solely to members of boards of education specially preparing candidates for examinations which such members are themselves in part to conduct, and upon the results of which are to be issued licenses to teach.

Let it further be distinctly understood, that it is intended to cast no reflections upon the personal or official integrity of any one who may have been or now may be engaged in thus specially preparing candidates. It is merely designed, kindly but plainly, to call attention to the manifest impropriety of it. Indeed, viewed in the light of its possible, nay, probable, consequences, it is something more than a question of propriety: it is a question of right and wrong.

No member of a county board of education should be engaged in thus preparing candidates, because (1) it is doing an injustice to himself. Let him be never so honest and conscientious, he cannot escape being the subject of suspicion. (2) It is unjust to the parties whom he successfully prepares. No matter what their abilities or attainments, there will not be wanting those who will attribute their success to improper influence and favoritism. "Be they as chaste as ice, as pure as snow, they shall not escape calumny." (3) It works a wrong to the other members individually, and to the board as a whole. It is calculated to cast a doubt upon their official acts. (4) Its tendency is to degrade the profession of teaching by impairing confidence in the validity of the credentials of its members. (5) It will, if followed, bring reproach, if not final disgrace, upon the whole school system itself. It will establish a precedent which designing persons will not be slow to follow hereafter for unworthy ends. (6) It furnishes a vulnerable point of attack for the captious critics and avowed enemies of our public school system.

MEETING OF STATE BOARD.—The State Board of Education met in regular quarterly session at Sacramento on Saturday, September 17th, 1881. The Life Diploma of Emory Watkins, granted January 5th, 1875, was, by a unanimous vote, revoked for gross immoral conduct.

Life Diplomas were issued to the following parties:

W. H. Larew, Mariposa Co.	Antoinette M. Huntely, San Francisco.
Mrs. Christine R. Collins, San Francisco.	Mary Solomon, "
Mrs. Josephine J. Connelly, "	Edward H. Kraft, San Mateo Co.
Mrs. Beverly Hathaway, "	Mrs. S. G. Wright, Del Norte Co.
Mrs. Mary Humphrey, "	

Educational Diplomas were issued to

Ida E. Caldwell, Amador Co.	Emma F. Gracier, San Francisco.
James Wells, "	Clara Isabel Churchill, San Luis Obispo Co.
H. F. Terry, Calaveras Co.	
Nelson Carr, Plumas Co.	Mrs. Frances M. Udell, Solano Co.
Jennie A. Forbes, San Francisco.	B. F. Whittemore, Santa Barbara Co.

LAKE COUNTY.

MACK MATHEWS, Superintendent.

The schools of Lake County are making some progress. Under the circumstances of organization through which we have passed, I think we have done as well as might have been expected of us.

The school law, in my judgment, needs some amendments; but we are content to accept what we have, rather than risk its good features with a California legislature, at least for a time.

I think uniformity in text-books should be brought about in some way. The benefits are, in my opinion, too great not to be apparent to all. But whether this change can be brought about at this time is for others to determine.

LASSEN COUNTY.

W. R. SCHOOLER, Superintendent.

Considering the impediments and disadvantages to education on border counties, the result of last year's work is certainly satisfactory. Although our school census shows an increase of nineteen census children only, the enrollment of pupils exceeded that of the preceding year by nearly one hundred, and the average daily attendance exceeds it by over sixty. One new district was also added to the list, thus making twenty districts in the county. This insures us a teacher's institute this year, which will, no doubt, further promote our educational interests.

LOS ANGELES COUNTY.

J. W. HINTON, Superintendent.

A retrospective view of the schools of this county during the year which has just closed shows that considerable advancement both material and educational has been made, while the outlook is highly encouraging. The ratio of average daily attendance to the number of census children is greater than during any previous year. This, in my opinion, may be attributed to three causes: First, increased school facilities; second, increased zeal on the part of teachers, and of interest on the part of patrons; and third, to the recent statutory change in the law, whereby the amount of funds received by a district is dependent in part upon the daily attendance of pupils, thereby making it an incentive to gather the children into the schools.

I think that the law would be still improved by making the number of teachers employed in the district, as well as the average daily attendance of its pupils, a factor in the apportionment of its funds. The money should be given to those who will use it for the purpose for which it is intended. Our people show a commendable disposition to provide the best school facilities. Many new houses are building, while several districts have voted bonds and taxes for the purpose of erecting commodious buildings and making other needed improvements.

Notable among these are El Monte, Little Lake, Maizeland, San Gabriel, and Cienega

districts, the first of these having recently voted bonds to the amount of \$5,000, while the others have taxed themselves in a correspondingly liberal manner.

It is very gratifying to be able to report an increasing interest in school work. Parents are gradually coming to a realizing sense of the great possibilities which may be attained by their children through our public schools. What our schools need now more than anything else are teachers having a more thorough and *professional* education. While we have many excellent and competent teachers, there are others who are utterly unqualified for the work, and whose removal from the schools would be a great gain.

I would suggest the following additions to the school law:

1st. That in the matter of repairs trustees be limited to fifty dollars per year for each teacher actually employed.

2nd. That power be given to some properly constituted authority to take charge and dispose of the property of districts which have lapsed. (There are two such lapsed districts in this county now, the property of which is being stolen and destroyed, because there is no one legally authorized to take charge of it.)

3rd. That, as superintendents are subject to a fine if their reports are not sent to the State superintendent within a specified time, trustees be liable to a fine also for failing to send their reports to the county superintendent within the time specified by law.

MARIPOSA COUNTY.

W. D. EGENHOFF, Superintendent.

The schools of this county are in good condition. One district has been formed during the past year. The county has as many schools now as it can afford to maintain. Few children are so far from a school as to render it impossible or even very inconvenient to attend.

MERCED COUNTY.

E. T. DIXON, Superintendent.

With few exceptions, I have visited all the schools in the county twice during the past school year, and from an examination of the different classes at the opening and closing of the terms, I can say satisfactory progress has been made in all but two. In these dissatisfaction with the teacher has caused the patrons to take their children out of school, thereby retarding the progress of the entire district. Since the "compulsory" law is a dead letter, and the trustees have the power to employ a teacher, (notwithstanding he may be opposed by any number or the patrons of a school) there is no remedy, and the district must lapse because of the contention that necessarily arises under such circumstances.

Now, that the superintendent can only draw requisitions when there is money in the treasury to pay them, that portion of subd. 2, sec. 1543, requiring the "estimated amount of funds upon which it is drawn, and the aggregate amount of requisitions previously drawn against it,"* to appear upon each requisition is superfluous, and should be repealed. Otherwise the amendments to the law of a year ago have not been sufficiently tried to pass upon.

MONO COUNTY.

MRS. C. W. SULLIVAN, Superintendent.

The schools of the county have made marked progress during the past year, and they are in a prosperous condition.

Parents, and, indeed, many that have no children, have manifested an unusual interest in school matters.

The teachers, with a few exceptions, have been first-class.

One new district was organized.

Owing to the decrease of mining interest of Lake, the district has been suddenly deserted, and it will probably lapse this year.

* This requirement was repealed by the late Legislature. [F. M. C.]

Too much credit cannot be given to Lake's friends of education for the faithful manner in which they labored to maintain a school. The building used for school purposes during the summer was destroyed by fire in November, and after that date everything that was needed to keep the school in session was freely donated by the poor, struggling community. During the winter the attendance of the children was regular, and I am informed by their teacher that they bravely faced storms that would deter strong men from going out.

MODOC COUNTY.

E. P. GRUBBS, Superintendent.

The schools of this county are making steady progress. More than one-third of the districts maintained school eight months or more.

I have no amendments to the school law to recommend, yet there are many imperfections in that instrument; but would recommend that the State Superintendent call a meeting of the county superintendents to propose amendments to the Legislature.

MONTEREY COUNTY.

S. M. SHEARER, Superintendent.

In my annual report for 1879-80 I alluded to the fact, that the broad foundations of our republic were scarcely begun, and but a small clearing in the forest primeval had been made by the settler's ax when the common school arose. It was then the glory of New England; it is now the glory of a nation. The wise men, who "built better than they knew," declared that poverty should no longer be ostracized, and should no longer be an inseparable barrier to a sound education. This country may proudly boast that throughout its whole extent a system of free public instruction is now maintained; and in many of the States, as in our own, the way is clear from the primary school to the State University; and clear, too, for the children of the poorest. In this grand work of beneficence California takes the place of honor among her sister States for her large-handed generosity, as instance the recent donation of D. O. Mills of the Bank of California, of \$75,000 to the State University. In proportion to our population, we pay more for the support of public schools than is paid in any other section of the country; but taking into consideration the time we have been to work, it is gratifying to know that our educational progress is considered a marvel elsewhere. Whether under the old constitution or the new, the representatives of the people assembled in the State Legislature have shown a spirit of extreme liberality in making appropriations for the support of the public schools. In this they have been ably seconded by the counties, and it is not unworthy of notice, that however much hard times may have disposed some of us to grumble at the taxes in general, no one worth consideration has been found who does not pay the school tax cheerfully. This is as it should be.

I stated that our schools spent \$37,591, of which the State contributed \$23,756. The number of census children between five and seventeen years of age for the year 1879-80 was 3,336. Of these 1,062 attended no school. On the registers of the schools of the county 2,473 names are enrolled. In 1881 there were 2,410, yet the average daily attendance is greater by 20 per cent. Average time school was maintained in 1879-80, 7.85 months; in 1881, 8.04 months. The average wages paid to teachers in 1879-80 was \$87 to males and \$66.66 to females; in 1880-81, \$86 to males and \$61 to females. The matter of retrenchment became necessary, owing to our limited resources, and still we may be obliged to practice further economy. Number on census roll 1880-81, 3,186 as against 3,336 in 1879-80; assessment roll in 1879-80, \$7,076,258; in 1880-81, \$8,076,874; rate of county tax for school purposes in 1879-80, 15 cents on each \$100, and in 1880-81, 14 cents. The census being less is doubtless owing to wholesome legislation in regard to taking the school census. Eight new districts have been organized; besides, there has been a saving in the incidental expenses of \$257.80 during the present school year.

While doubting the wisdom of cutting down salaries, yet the necessity is apparent to all. The small attendance upon our schools compared to the number of children annually listed furnish the advocates of compulsory education a strong argument for enforcing attendance.

I referred to the Salinas public schools last year in the following language: "It is gratifying to know that Salinas City has made an educational record during the past year which is not only first in the county, but among the first in the State." Though there has been a falling off since last year in the census number from 529 to 480, the average daily attendance this year was 304 against 299 last year; and it would have been larger, had children under six years of age been admitted, as they are elsewhere. School was maintained for nine months at an expense of \$5,428, and from this might be deducted \$1,611, voted to purchase a lot and build a school-house. The teachers here know that their work is under constant and intelligent supervision, and cannot but feel that if their pupils do not make satisfactory progress, they themselves may prepare to progress out of employment. The school officers do their whole duty, and the results may be pointed out with legitimate pride. But the schools have made still greater progress this than the preceding year; and I feel that the teachers have all earned their money, and compare favorably with the best teachers in the State. Monterey, Gonzales, Castroville, Lindley, Carrolton, and other schools have likewise made gratifying progress, and are endeavoring to keep pace with Salinas City.

Expenditures for the incoming year will be reduced to a minimum, and the school fund directed from illegitimate to legitimate channels, as it should be.

The board of education has endeavored to keep up the high standard heretofore maintained in teachers' examinations, so that we are not retrograding in that respect, but compare favorably in our system of examining teachers with the best in the State.

Teachers educated in the public schools of the county seem to give general satisfaction, and compare well with teachers educated in our normal, training, and high schools.

Last winter the legislature passed laws requiring itemized bills to accompany all school orders for incidental expenses incurred. This will save thousands of dollars annually, and be directed to paying teachers' salaries. Instead of having the order state for "supplies," these supplies must be itemized, and give the cost of each.

In my travels over the county, I have met with school trustees, parents, and teachers, and in many instances have, in an amicable way, settled many neighborhood and local quarrels that had been long standing, and had a tendency to impair the usefulness of the schools; and everywhere I met with that kindness and genuine courtesy, which proves that the people are deeply interested in the cause of education.

MENDOCINO COUNTY.

JAMES R. THOMAS, Superintendent.

The school superintendent is unable to report any marked change in the general condition of schools in Mendocino County, either for better or worse, since the last report was made to July, 1880. On the whole, this school year has been a pleasant and, I think, a profitable one to all parties interested.

The work of school visitation has been very heavy under the law requiring two visits per year to each school. Notwithstanding the law was changed, it was too late to afford relief for the current school year. Nearly all the schools had been visited in the fall, and the second visit during the spring was necessary with a view to grading in July. For Mendocino County this is very onerous.

The school superintendent is very fortunate in having for his deputy Prof. H. Price, who has been a faithful and competent co-worker in the office and out of it.

The schools of the county, with a very few exceptions, are in a healthful, prosperous condition. In the matter of school discipline I am pleased to be able to report very favorably. The teachers are generally wide awake to the precious interests committed to them, and the pupils are generally quiet and studious.

I find a few examples of improvement in school buildings, furniture, and apparatus, and a great improvement in libraries.

NEVADA COUNTY.

JOHN T. WICKES, Superintendent.

The public schools of our county are of three complexions, as regards grading.

First Class.—The schools of Grass Valley—sixteen in number—under the supervision of an incorporate board of seven directors, are divided into high, first, second, and third grammar, and lower down into first and second primaries.

Then Nevada City district, likewise incorporated, has eleven schools within its jurisdiction, numbered from first grade down.

The schools of the above class (first) are the most closely graded, having one teacher to each two classes.

Second Class.—Truckee schools are divided into three departments. The schools of Allison Ranch, Moore's Flat, North San Juan, North Bloomfield, Oakland, Rough and Ready, and Union Hill into two departments each.

Third Class.—The other thirty-four districts have each but one ungraded school, some of which contain all the classes from primary to advanced.

The wants of these schools are different, and the supervision of them must be modified.

The schools of Nevada and Grass Valley have their special course and hired principals. Of course, visitation of them by the county superintendent must be one of mere inspection, as an elective officer of the whole county, and one of an advisory character with regard to school appointments generally. In the other fifty-one schools of the county I have done considerable visitation and examination, devoting my whole time to the duties of my office. We have more system, closer uniformity of programme, so as to properly divide and utilize school time. We have better methods and a higher average of teachers than ever before.

It is best to leave promotion of scholars from one class to another to the teachers themselves. General examinations by the superintendent, however, serve in the first place to stimulate teachers and pupils to the highest endeavor. They serve to indicate what parts of studies should be given particular attention. They serve to find out whether the studies have been properly reviewed. If not, the superintendent can dictate another review, from his position being above the cavil of the district. In our ungraded schools it has been too much the custom to hurry pupils through the books hastily; the parents deceived into the idea that their children are making rapid progress thereby. Teachers have connived at this practice, because the parents exhibit displeasure at their children being subject to frequent reviews. It is well, then, that some more independent authority should intervene. On the whole, we have secured some beneficial results of the past year, and anticipate something better with new insight.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN OCTOBER.—*Mercury* is an evening star, setting on the 8th at 5 h. 28 m. P. M.; on the 18th at 5 h. P. M., and on the 28th 4 h. 38 m. P. M. He is at his greatest eastern elongation on the 16th, near the moon on the 24th, and stationary among the stars on the 28th. *Venus* is a morning star, rising on the 8th at 2 h. 56 m. A. M.;

on the 18th at 3 h. 19 m. A. M., and on the 28th at 3 h. 40 m. A. M. She is at her least distance from the sun on the 17th, and near the moon on the 20th. *Mars* rises on the 8th at 8 h. 51 m. P. M.; on the 18th at 8 h. 20 m. P. M.; on the 28th at 7 h. 45 m. P. M. He is near the moon on the 13th. *Jupiter* rises on the 8th at 6 h. 35 m. P. M.; on the 18th at 5 h. 47 m. P. M.; on the 28th at 5 h. P. M. He is near the moon on the 10th. *Saturn* rises on the 8th at 6 h. 9 m. P. M.; on the 18th at 5 h. 22 m. P. M., and on the 28th at 4 h. 33 m. P. M. He is near the moon on the 9th.

WE have received a paper, the *Literary Microcosm*, published in New York, in which the editor attacks the wave theory of sound. He asserts that Tyndall, Helmholtz, and others equally renowned, are wrong in their conclusions concerning the nature of sound, and that the law relating to its intensity is not supported by the facts. That the intensity of sound diminishes as the square of the distance increases has been accepted by all compilers of books on acoustics, and taught in the schools on both continents for years; but now comes the editor aforesaid and declares it is all wrong. One of his methods of attack is about as follows: At two feet from the sounding instrument the sound is but one-fourth as loud as at one foot from it; at three feet but one-ninth as loud; at four feet but one-sixteenth as loud; at twenty feet but one four hundredth as loud, and so on, to the limit of audibility. Also, at a distance of ten inches the sound will be only one-hundredth the intensity it will be at a distance of one inch. If the law is correct, it must hold good whatever unit be employed to measure the distance; and if a small unit be used, he claims an absurdity is apparent. Prof. Edison charges that "there are more frauds in science than anywhere else." Will our readers study the subject, and, if possible, ascertain the truth? Is the wave theory of sound a fraud?

The editor of the *Microcosm* also propounds the following query: "Why does a hoop remain upright while rolling, though it falls as soon as it stops?" He regrets to announce that, although he has received hundreds of answers from college professors and students, civil and mechanical engineers, military and naval officers, still not even an approach toward the correct answer was received from a single one. Probably here is another scientific fraud. First class in physics will now stand and answer. If you will send your answers to the editor of this department before October 15th, a few typical ones will be published, together with the one called correct by the editor of the *Microcosm*.

SENSIBILITY OF THE TELEPHONE.—Every one knows that the very feeblest currents produce audible sounds in the telephone, which is more sensitive than any galvanometer to feeble currents. M. Pellat lately declared that the heat necessary to warm a kilogramme of water one degree would, if converted properly into the energy of electric currents, suffice to produce in a telephone an audible sound for ten thousand years continuously.

A LARGE COLLECTION OF SPIDERS.—Captin Holden of Cincinnati, Ohio, is credited with an exceptionally valuable collection of spiders, numbering nearly 25,000 specimens, and embracing 4,000 species. They are arranged in glass bottles, with labels giving name, collector, and locality. California furnishes 5,000 specimens, and New England as many more. One species is represented by 108 specimens, from all parts of the United States, showing how much effect environment has in modifying form. The collection is supplemented by a full and complete catalogue of the literature of the subject, comprising about 70,000 references on 10,000 cards. This valuable contribution to the study of this little known branch of natural history he hopes to complete and publish at an early day.

THE San Francisco *Chronicle* says there is a tract of country in Butte County, Cal., about fifteen miles long by half a mile in width, where lightning strikes trees nearly every time a storm passes over. Outside of this strip there is no such damage. The line can be plainly traced by dead timber. As many as three fires have been caused by lightning in this tract in one single storm,

PROF. S. P. LANGLEY has made the following calculations: A sunbeam one centimeter in section is found in the clear sky of the Alleghany Mountains to bring to the earth in one minute enough heat to warm one gramme of water by 1° C. It would, therefore, if concentrated upon a film of water 1-500th of a millimeter thick, 1 millimeter wide, and 10 millimeters long, raise it $83\frac{1}{2}^{\circ}$ in one second, provided all the heat could be maintained. And since the specific heat of platinum is only 0.0032, a strip of platinum of the same dimensions would, on a similar supposition, be warmed *in one second* to $2,603^{\circ}$ C.—a temperature sufficient to melt it.

It is believed in England that indigo will soon go the way of madder. In 1869 the annual import of madder into England was over \$5,000,000. That year a German chemist discovered the means of artificially manufacturing madder, or, as it is now called, alizarin. The consequence is that madder is no longer raised, and the 400,000 acres of land that had been given to its cultivation are devoted to other crops. A few months ago a mode of manufacturing indigo chemically was discovered. It is not a complete success just yet, as it is quite expensive; but the chemists who have it in charge promise that in a few weeks they will be able to turn out cheap chemical indigo. When this is done, another agricultural crop, which gives employment to thousands of persons, and which was really the cause of the French colonization of Louisiana, will be abandoned.

The use of gas for cooking and heating is making rapid headway in England. Gas is cheaper in England than here, which may account for the more general use of the cleanly gas stove there than will be likely to be the case with us. It is also claimed that if gas could be substituted for coal in London there would be a material improvement of the atmosphere.

A GERMAN philosopher has been experimenting as to the influence of intellectual labor upon the circulation of the blood. His observations show that the heart beats are increased two or three pulsations per second. The greater the labor and the closer the attention, the greater the number of pulsations. Thus this philosopher discovered that the study of geometry, to which he had never given much attention, made his heart beat more rapidly than that of philosophy, with which he was already familiar. Concerning the effect of arduous love-making upon the heart beats, he does not appear to have recorded any observations.

A PAPER was read recently before the Academy of Science in Paris by M. Muntz, in which he stated that alcohol was found in appreciable quantities in the ground, in water, and in the air. He found it to exist in all natural water except pure spring water. It is found more abundantly in snow. Rain-water and the water of the Seine contain about 1 gr. to a cubic meter. The destruction of organic matter by various agents of fermentation accounts for the wide diffusion of alcohol in nature.

ABOUT 15,000 varieties of color are employed by the mosaic workers of Rome, and each of these varieties has about fifty shades, so that in all 750,000 tints are affected, which the artist can distinguish with the greatest facility. Even with this variety the workers find a lack of tints.

NEWS RECORD.

Educational.

The Department of Education of the American Social Science Association has sent out a circular inviting attention to the study of the youngest infants, and observations of the simplest manifestations of their

life and movements. It has, also, proposed a series of questions, the answers to which will furnish valuable material for the investigation of the physical and mental condition of the youngest life, and of the unfolding of the faculties. This subject has only recently begun to receive the sys-

tematic attention of scientific men. Mr. Darwin has published a paper recording his observation of a young infant, and has touched upon it in his work on the "Expression of the Emotions." Prof. Kussmaul, of Germany, has also published a paper upon it. Dr. William Preyer, of Jena, has been engaged in the study during the last four years. He has published two or three articles upon it, the last of which appeared in the *Deutsche Rundschau* last year; and is about to publish an extensive work, which will contain all his observations and a careful analysis of the phenomena which the development of the faculty of speech presents.

The statistics show, according to the statement of the Revenue Department, that during the year 1878, \$52,570,264.69 was expended in the United States in the manufacture of intoxicating liquors, \$10,759,320.08, making in all \$63,290,604.77, the cost of making which represents only a financial part of the money spent in this business. It is estimated that the 116,000 saloon keepers in the United States represent \$700,000,000 annually expended for intoxicating beverages. Now let us look at the number of schools in the United States, and the money employed in the cause of education, and see how the two compare. There are 141,629 schools, 221,041 teachers, and 7,209,938 scholars, costing annually \$95,402,726, or \$603,597,274 less than whisky!

The approximate number of graduates at the New England colleges this year, as shown by the list of seniors in the official catalogues, is as follows: Harvard, 195; Yale, 174 (including forty-four "scientific"); Amherst, 79; Dartmouth, 75; (including twenty-six scientific and agricultural students); Williams, 53; Bowdoin, 48; Brown, 43; Bates, 37; Colby, 36; Wesleyan, 30; Trinity, 19; Vermont, 15; Tufts, 14; Middlebury, 8; Massachusetts Institute of Technology, 31; Boston University, 24, of whom 5 are women; Massachusetts Agricultural College, 18. This shows a total of 873 seniors catalogued in New England, with only two or three of the minor colleges unrepresented. Approximately half the number (369) belong to Harvard and Yale. The bachelor's degrees conferred this year in New England may be estimated to number about 850, all told.

The Concord School of Philosophy has been as prosperous and interesting as ever this year; and excepting at the Kant meeting at Saratoga, there has probably never been so much good talk about Kant in so short a time as on the Kant days. Professor Hedge, of Harvard, read an admirable sketch of the philosopher's life, which not only told his story, but clearly stated his philosophical position and influence. Pres-

ident Porter, of Yale, sent a discourse upon Kant's relation to modern religious thought. Professor Harris, of Missouri, Mrs. Julia Ward Howe, Professors Watson and Morris, of Michigan, Mr. Mears, and others, also took part with papers and conversation.

The audience at this interesting assembly, in which the garden and the groves of the Academy are renewed, is never very large, but as usual, the true audience is beyond, and is reached through the reports. Jocosity in such reports, however, is misplaced. To ridicule Messrs. Hedge and Porter and Harris is their discourse upon Kant or any subject of philosophy is as absurd as to make sport of John Stuart Mill in discoursing of political economy, or Macaulay of history, or the bankers at Niagara of finance. The papers read at the Concord School are a very valuable contribution to philosophical study in America.—*Harper's Weekly*.

Mr. George I. Seney, of this city, has presented another gift of \$100,000 to the Wesleyan University, making a total presented by him to that institution of nearly half a million. This last gift is to be devoted to the foundation of thirty-six competitive scholarships, which will be perpetual, yielding incomes ranging from \$100 to \$200. There appears to be no end to Mr. Seney's generosity. We have heretofore mentioned his gift of \$50,000 to Emory College, and will probably soon have occasion to notice some other benefaction from the same source.

The salaries of women teachers in Germany is decidedly meager. The lowest is \$200, and the highest not over \$450. They, however, receive pensions. Retirement at the end of ten years' active service entitles them to a pension of one-fourth of their annual salary, and for every additional year of service, one-eighteenth is given.

The new building for the Boston English high school and Latin school is regarded as the largest free public building in the world. It is 339 by 220 feet, with a hollow square in the middle. There are fifty-six rooms in all, including a drill-hall thirty by sixty, a gymnasium of the same dimensions, and an exhibition hall capable of seating twelve hundred and fifty persons. The cost, as already stated in the JOURNAL, was \$812,000.

In 1783—ninety-eight years ago—Noah Webster published a little book he called "First Part of Grammatical Institute of the English language," afterwards abbreviated into "Spelling Book." It afforded him an income on which he lived while at work on the "Dictionary"—nearly half a century. The "Dictionary" never yielded him any profit, but has been a valuable source of income to his family.

The salaries of teachers in England are considerable higher than they were a few years since. Out of 12,981 certificated teachers, only 132 are receiving less than \$250 a year. 232 teachers get \$1,250 to \$1,500, and 137 are in receipt of \$1,500 and over. Those in receipt of \$250 to \$375 a year are now 10.72 per cent. of the whole. In 1874, they were 15.13 per cent.

The offer of the trustees of the Boston Public Library to assist the school committee in the introduction and circulation of good literature among the pupils of the Boston public schools has been formally accepted.

The fund left by the late Mrs. Williams, of Norwich, Connecticut, for the building and endowing of a school for young ladies in New London, is now valued at \$100,000 in personal property, and \$25,000 in real estate, besides the site, which is worth \$10,000.

Personal.

The grave of the Texan hero Sam Houston is only marked by a jessamine bush.

There are hundreds in this country who will feel a sense of personal loss in the death of George Payn Quackenbos, which occurred on Sunday, July 24th, at New London, N. H.; while thousands, both of men and woman, who never met him personally, but have derived help from his many educational text-books, will share in their surprise and grief. Dr. Quackenbos was one of the most widely known and largely influential of late American educators. His broad intellectual grasp enabled him to treat with equal facility the subjects of history, grammar, rhetoric, and mathematics, and his books in these departments have long been recognized as standard works all over the land. They were the fruit of twenty years' practical experience as rector of the Collegiate School in New York, most of them having been written during the latter years of his school-life, and a number after he had finally given up his more active pursuits that he might have more time for purely literary work—*Christian Union*.

The members of the Cabinet, says the Cleveland *Herald*, are all married, and during the illness of the President have been accompanied by their wives on their nightly visits to the White House. Mrs. Blaine is a woman of marked executive ability, and for this was chosen to meet Mrs. Garfield at the railway station, and gently reveal to her the real condition of the President during the ride to the White House. Mrs. Windom and Mrs. MacVeagh are favorites in social circles, because of

the kindness of heart and simplicity of manner they manifest. Mrs. James possesses much of the tact in the management of affairs that has made her husband so successful. Mrs. Lincoln is more retiring and dignified in her manners than the others; while Mrs. Kirkwood is like her husband, plain and unpretentious, and evidently fonder of the comforts of the domestic circle than of shining in society.

Mr. Bret Harte's chances of ultimate interment in Westminster Abbey have been lessened by the death of Dean Stanley, who was a great admirer of Mr. Harte's works, and who once said to him, laughingly, but with genuine sincerity, "I do not want you to be in a hurry to quit this world, Mr. Harte, but if you die before me, I shall certainly put you in Westminster Abbey."

Mrs. Louisa Parsons Hopkins, the author of the poem "Motherhood," which has attracted much attention, is a native of Newburyport, Massachusetts. At school in that place, she was one of a rather remarkable class, among whose members were Miss Andrews, the author of the "Seven Little Sisters," Mrs. Harriet Prescott Spofford, Alfred T. Bricher, the artist, the wife of Mr. George Corliss, of the Corliss engine, and others of note. Mrs. Hopkins is the author of many attractive and valuable articles on methods of teaching, which have from time to time appeared in the *Primary Teacher*, and some of which have been reprinted in this Journal.

King Humbert of Italy has bestowed a yearly pension of \$6,000 upon Garibaldi, and, in consequence of his increased revenue, the old patriot is enlarging his establishment at Caprera.

The grand cross of the Legion of Honor has been presented to Mr. Pasteur, one of the scientists who disbelieve in the doctrine of "spontaneous generation."

Mr. Albee, of the Concord School, says that "it," in its possessive form, occurs but once in Milton, three times in Shakspeare, and not at all in the Bible.

By glancing over *Studies of Assassination*, by the United States consul at Cardiff, Mr. Wirt Sikes, which starts with Catherine de Medici, and proceeds by way of Guy Fawkes and Charlotte Corday to Wilkes Booth and Sophie Perovsky, it will be seen that lovely woman has borne her part in these bloody affairs.

According to Mr. T. A. Trollope's recent essay, Guido's "Cenci" has no connection with the famous Beatrice, who, it seems, was by no means the injured saint we have been taught to believe.

Authors are generally accused of bad handwriting, but the poet John James Piatt must take the palm among them all, he having just been discharged from the Cincinnati post-office, where he was a money-order clerk, on account of his illegible penmanship.

In addition to others, Mr. Moody has secured the assistance of the Rev. Dr. Bonar for his fall campaign, Mr. Sankey being still in charge of the music.

For the first time in many years, a Prince of the Roman Church has recently met socially the sovereign of Great Britain. On the 14th of July, the day on which he completed his seventy-third year, Cardinal Manning met the Queen at a garden party given by the Prince of Wales, and was remarked to be one of the most courteously courtly of the brilliant throng. The circumstance is alluded to by the London press as indicative of that steady growth of public sentiment which inclines to the breaking down of needless social and religious barriers.—*Harper's Weekly*.

Ernest Renan claims to have discovered a model of a sewing machine, supposed to have been made over six thousand years ago by an Egyptian named Zynger.

In the course of conversation relating to Jefferson Davis's book on the Confederacy, General Longstreet spoke as follows of certain generals: "General Lee was a noble character; but he was not a perfect field-marshal. He was not always cool in the heat of battle, and that is really the greatest test of a commander's power. General Stonewall Jackson not only had perfect control of his nerves, in battle and out of

it, but he had the additional merit of being able to move his troops with great promptness, and of executing his plans with marvelous decision. Jackson was a great field-marshal. Nearly all of General Grant's military ability is his sublime control of himself. Ninety-nine officers out of every hundred in the army would probably pass a better theoretical examination than Grant; but, when the blood begins to run, or there is a man wanted for an emergency, Grant would be head and shoulders above them all. The excitement of battle seems to cool rather than excite him. He is a great practical soldier."—*N. Y. Independent*.

Dean Stanley's death-bed was a quiet and peaceful one. In the morning, the sacrament was administered by Canon Farrar, the Dean himself pronouncing the blessing in a full, intelligible voice, and taking leave of every one individually, including the servants. The day passed quietly, and as evening came on his breathing grew difficult, but there was no sign of pain. He often spoke at length and with earnestness, but only a word here and there could be made out. Death came calmly, without even the motion of a limb.

The Deanery of Westminster, made vacant by the death of Dean Stanley, is considered to be the most desirable position in the gift of the Church of England, and the recent incumbent has more than once refused a bishopric, rather than resign his office. The Deanery of Durham is richer by \$5,000 a year, but in prestige falls far below that of Westminster. The candidate is selected by the Queen, or, rather, recommended, which is equivalent.—*N. Y. Independent*.

BOOK NOTICES.

ELEMENTS OF ALGEBRA. By G. A. Wentworth, A. M., Professor of Mathematics in Phillips Exeter Academy. Boston: Ginn & Heath. 1881.

This book of about 375 pages is by the author of Wentworth's Geometry, and that is enough to warrant its excellence; for that work has been indorsed by the very best teachers of mathematics in this country. The present book is made up from English, French, and German sources, and therefore steers clear of all American treat-

ises on this subject. It has been tested in the school-room, and it is found that the average class can perform the work in one year, a feature quite in its favor. Factoring is made a specialty by Prof. Wentworth, and is a very valuable element in the book.

REMINISCENCES OF THOMAS CARLYLE. Edited by James Anthony Froude. New York: Harper & Bros. San Francisco: A. L. Bancroft & Co. 337 pp. Price 75 cts. It is scarcely necessary to write a notice

of this book. Every intelligent reader knows what it is. It has been before the public for months, and been most unsparingly criticised—Carlyle has been criticised, his “Reminiscences” have been criticised, and his editor has been criticised. But the teacher, if much of a reader, will not be satisfied with reading criticisms of the book. It will only whet his appetite to read the book itself—curious at least to know what so savage a critic as Carlyle has to say of his visitors, and he will learn from this book.

TALKS WITH TEACHERS. - By A. D. Mayo. Boston: New England Publishing Company, No. 16 Hawley street. 200 pp.

These talks are by a *Visitor*. The “Committee man” has been around. He has been around a great many times; and “these few remarks” are the expression of his thoughts—the photograph of the impressions made by these visits. These forty views will please the earnest, active, thoughtful school-teacher, for his aim is to bring the teacher, the parent, and the people into closer bonds of union, and more intimate knowledge of each other, so that they may work together better. He is an advocate of the most modern methods. It is a very suggestive book.

ADVANCED READINGS AND RECITATIONS. By Austin B. Fletcher, A. M., LL.B. Boston: Lee & Shepard. San Francisco: Doxey & Co. 450 pp. Price \$1.50.

This volume of 450 pages is by Professor Fletcher of Brown University. It is intended for advanced classes in colleges and high schools, to supply what he thinks a great and long-felt need. We do not see that it contains much that is new. We are sure that we have seen nearly all these pieces in books of the kind before; still it is a good selection, and pupils or teachers who have none will do well to get it.

GLEANINGS IN THE FIELDS OF ART. By Ednah D. Cheney. Boston: Lee & Shepard. San Francisco: Doxey & Co. 345 pp. Price \$1.50.

All students, and especially all teachers, should have some correct notions of art. We will not here suggest how the knowledge is to be obtained. The earnest, intel-

ligent teacher will get it in some way. In this book the essay on art will give many valuable suggestions to any one, and much information to those not well read on the subject.

Then there is an essay on Greek art, the fountain-head of all modern art, and as this writer says, a greater wonder than any one of the seven wonders of the world. There are other essays on Spanish, French, English, and American art, which make the book a valuable one in the school and the family.

BIGELOW'S HANDBOOK OF PUNCTUATION, AND OTHER TYPOGRAPHICAL MATTERS. By Marshall T. Bigelow, Corrector at the University Press. Boston: Lee & Shepard. San Francisco: Doxey & Co. 16 mo. 112 pp. Price 50 cents.

The original design of this concise yet comprehensive treatise was to lay down some practical rules for the guidance of printers and proof-readers; but both teachers and scholars will find it invaluable, as it treats of subjects which, in these times when the practice of composition has become so general a requirement, is absolutely necessary for them to know. It will also be found useful to business men who have occasion to print circulars and advertisements. The author, with an experience of nearly fifty years at the University Press at Cambridge, Mass., one of the best printing-offices in the country, is considered the authority on subjects with which the book deals. It is the best treatise of the kind extant, and no teacher, scholar, or any one who ever has occasion to write a sentence can well do without it.

LIPPINCOTT'S POPULAR SERIES OF READERS. By Marcius Wilson. Philadelphia: J. B. Lippincott & Co. San Francisco: J. A. Hoffman, 240 Montgomery street.

We remember the Wilson's Readers of fifteen or twenty years ago with sharp distinctness, because they bore a close relation to object-teaching, in which just then we had become greatly interested. But these are not the readers of that time. There has been a progress in book-making for children, and this series shows it. It is original in method, and therefore different from any series we have seen. The first

books of the set are made charming by the great variety in both matter and method, the oral and written exercises, and the beauty of the illustrations. In the Third Reader is developed a new feature—the continuous narrative, a running story with characters carried through from one book to another. Each chapter is a unit in itself, but they can all be formed into a continuous story, with the charm of fiction. A geographical story, for instance, introduces every feature of land and water, with mills, factories, forges, great variety of scenes, incidents, and teachings that carry interest to the highest pitch. Teachers will find this series valuable, we are certain. J. A. Hoffman, agent, has them for sale, 240 Montgomery street, San Francisco.

LOST IN A GREAT CITY. By Amanda M. Douglass. Boston: Lee & Shepard, Publishers.

This story is rather more in the sensational order than Miss Douglass's earlier stories were. Her "Seven Daughters" and "Nelly Kinnard's Kingdom" and others were simple, charming romances, true pictures of home life, bright, fresh, and pure as nature. Those who follow little Nora through the forty chapters of this book, sympathizing with her in all the rapidly shifting scenes of her strange bewildering life, will be liable to be wrought up into a high pitch of excitement before they finish it. The story is told with all the fascinating power of this pleasing writer. It is sold by Doxey & Co., 691 Market St.

HANDBOOK OF SYNONYMS. With an Appendix, showing the Correct Uses of Prepositions; also a Collection of Foreign Phrases. By L. J. Campbell. Boston: Lee & Shepard. San Francisco: Doxey & Co., 691 Market St. 24 mo. 160 pp. Price 50 cents.

This is an extremely handy little book for pupils; in fact, for any one. It can be carried in the pocket, and thus be consulted at any time. It contains a large number of synonyms, helping one to choose the proper word, or to vary the expression, or to give precision to language. It has a list of prepositions, showing their proper use, which is a puzzle to some writers; also a list of foreign phrases. It is a very compact and useful little book.

LENOX DARE. By Virginia F. Townsend. Author of "That Queer Girl," "Only Girls," etc., etc. Boston: Lee & Shepard.

Miss Townsend is the author who has said somewhere that "there never was a true or noble deed in the world without some woman or girl at the bottom of it." We may well doubt the truth of this saying—but she writes good stories, notwithstanding—and she writes with good purpose, she means good, she does not pander to vice in any shape, she unmasks it, and so gives strength to all. Sold by Doxey & Co., San Francisco.

LITERARY NOTES.

"The Orthoepist," by Mr. Alfred Ayres, which is issued by D. Appleton & Co., is in its seventh edition. The schools on the Pacific Coast are beginning to adopt it as a text-book.

The Century Co., publishers of *Scribner's Monthly* (to be known as "*The Century Magazine*" after October), will soon issue a portrait of Dr. J. G. Holland, which is said to be a remarkably fine likeness; it is the photograph of a life-size crayon drawing of the head and shoulders, recently made by Wyatt Eaton, and will be about the size of the original picture. It is to be offered in connection with subscriptions to *The Century Magazine*.

Three dollars a year for *St. Nicholas*! What boy that ever saw a copy would not blister his hands by work to earn \$3, if it would bring him this dainty book every month? And the October number is just full of good things—fairies and giants, and living lanterns and wonderland. And such pictures! They would charm the sleepiest dunce. The table of contents would make one wild with expectation. Then read the announcement for '82, and think—what's the use of living if you can't get *St. Nicholas*.

Scribner's for October is the last one of the first series (22 vols.). The November number will begin a new series under the title of "*The Century Magazine*." It keeps up its excellence in both text and illustrations. There are two articles in this number by California writers, (one good short story by Miss Hopkins, and some good poems) both illustrated. They are attractive articles. The opening article (illustrated) on Yorktown is an interesting historical sketch. Schuyler's Peter the Great is concluded in this number.

Harper is attractive as usual. If the illustrations of A Berkshire Road, and Adirondack Days, can be excelled, we shall be glad to see the work. The naturalist will find an interesting article in The Peabody Museum. *Harper* is noted for good short stories, of which there are several in this number.

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No. 11

MORAL HYGIENE.

BY CHRISTINA MACCONNELL.

[Portland, Oregon.]

[A paper read before the Oregon State Teachers' Association.]

ALL history is a record of might against right; of the mysterious interflow of good and evil, by which the noble and base are overwhelmed in a common ruin; of deeds cruel and oppressive, by which the innocent suffer far more than the guilty.

The way of the transgressor may be hard, but the way of that transgressor's victims is much harder. To rejoice over the returning prodigal is indeed "well done"; but still that joy cannot and does not undo the evil that prodigal has done; it does not restore the life he has ruined, nor heal the heart he has broken; for these, steeped to the very lips in the misery which he has brought upon them, no fatted calf is killed, neither ring nor robe provided. In the heavenly rejoicing over the one sinner that repents, can nothing be done for that sinner's victims? Is there no redress for their blighted lives? No remedy for their voiceless misery? Is there no way by which the oppressed may be comforted, as well as the oppressor forgiven? Must the struggle upward and onward always be like the fabled elephant trying to extricate itself from the swamp?

We have before us the threefold nature of the child: the physical, the

intellectual, the moral. Years of careful investigation have at length unfolded to our view the wonderful mechanism of the physical body; have at length disclosed the fact, that disease, physical pain, and suffering are the effect of broken hygienic laws. That epidemics still flourish with deadly power, that inherited disease still blights our fairest blossoms, proves no imperfection in the law; but that a full, a complete solution of all its intricacies has not yet been learned; but we have learned, that, in accordance with the calm unswerving uniformity of this law, the body slowly grows to maturity; that maturity, that manhood, once reached, it will not, it cannot, backslide into infancy. The same supremacy, the same uniformity of law, we all acknowledge controls the intellectual nature. The mind may be compared to a millstone in a mill: it turns, it grinds, it bruises the hard grains of thought into fine, nutritious meal; or to a stomach, in which truth and fact are not only digested, but assimilated and converted into lofty sentiments and pure ideas, and our knowledge of and confidence in the law of mental sequence gives us assurance of the result—intellectual manhood, a grasp and strength of brain power which is permanent, which will not fail us in our hour of need. And if this be true of the physical and intellectual, why not of the moral nature? Will not that nature grow into perfect moral health, if it receive the proper moral food? Will it not reach a matured moral manhood, if properly developed, if carefully trained? Will it not produce, not righteousness of conduct merely, but righteousness of character, righteousness that will become as truly a part of the moral body, as truly assimilated to moral bone and muscle, as the assimilated food becomes the bone and muscle of the physical body?

We lift our eyes to the sky, and the clouds float above us, gold in the west, deepening to crimson overhead, and fading to that indescribably beautiful blue-purple as they reach the snow-capped mountains in the east; and we know that the warm sun-rays not only painted those rainbow hues, but raised them from their ocean-bed, and caused them to float so serenely, so calmly through space. We look at the forest, dark and gloomy, and we know that each strong and shapely trunk, tapering like a spire, each gracefully waving branch, each delicately green and curiously veined leaf, receive their strength and power, grace and beauty, from these same sun-rays; and will not as surely the eternal law of right, the sun of the moral universe, send forth its rays of truth, honesty, integrity, purity, holiness, creating and perfecting a moral world of blessedness, love, and joy?

As teachers, there are presented to us two elements in the moral nature of the child: its power of imbibing, and its inherent power of growth therefrom. It imbibes from us, not so much what we say and do, as what we are. What we really are, our real selves, our ego, surrounds us with a moral atmosphere which the child receives into its moral lungs as naturally and thoughtlessly as it does the air we provide by ventilation for its physical lungs; and as water cannot rise higher than its source, so our influence cannot be higher and nobler, purer and better, than we ourselves are. This silent influence, our unconscious tuition, is by far the most powerful and lasting. And as the diamond, fluttering, trembling, sparkling, now purple, now green, now gold, is a tiny copy

of its source, a miniature sun, giving back the sun-rays it took countless ages to catch and crystallize, so each human being is a reflection of the moral sun which has crystallized its character, and shaped its thoughts and feelings. The teacher should be the realization of the child's loftiest ideal, the embodiment of his highest flight of fancy—no plain so high, no atmosphere so pure, but there can he walk, strong, erect, and kindly, as in his native element. He must be no whited sepulcher; but pure rock crystal rather, against which each successive wave of passion, of temptation, may dash, but can bear away only the crystal grains of sympathy and love, leaving exposed an inner surface as pure, as clear, as genuine.

Being right must be supplemented by doing right; and the very first act in this direction should be to bring prominently before the child some of life's saddest but sternest truths; that there are some wrong things we can never undo; that

“ Our deeds still travel with us from afar,
And what we have been makes us what we are ”;

that sorrow for wrong-doing, willingness to beg pardon, promises of never again repeating the offense, may be meritorious, but are not remedial; also, that obedience to the rules of school will bring moral growth, as study brings intellectual growth; that these rules are not arbitrary, but natural, universal, unchangeable: not made by the teacher and for the teacher, but exist in the very nature of things; that the breaking of these rules, on the part of the pupil, can no more injure the teacher, than his refusing to eat can make the teacher hungry. Again: punishment, as such, should never enter as an element in school government; but in each case, the natural sequence of good or bad conduct should follow its cause—the child's sense of justice should never be violated. The grand moral lever appreciation, with its fulcrum sympathy, and its power love, can lift to a finer, higher level the heaviest weight of coarseness and depravity. Nothing is so much to be feared in the training of children as fear. Of all modes of control, this is the weakest and, at the same time, the most injurious. The teacher, it may be said, has gained his or her point. If that point be to show which is physically the stronger, if that point be to implant a fear of consequences: yes; but if it be to give to the child clearer ideas of right and wrong, to develop and strengthen its moral nature: no. One of the strongest elements of good discipline, and one perhaps more neglected than any other, is calm, steadfast poise, that the child will know always what to expect. If it has come short in duty, then is the very hour when it needs strength and help from its own teacher, and not betrayal into the hands of a stranger. Too much cannot be said in censure of the practice of sending children to the principal's room for correction. The shock to the nervous system must be terrible, as its cry of mingled pain and horror fully testifies. And still another element that should never be allowed to defile the atmosphere of the school-room is levity, satire, or jesting upon the pure, the earnest realities of life, tainting the invisible altar of purity in every soul. Let the teacher beware, lest in the delicately pure, the holy of holiest of life, when the children ask for bread, he give them a stone. We are told much of the pleasures of sin, the temptations

to evil; but will the child so trained in moral hygiene find pleasure in sin, or temptation to evil? The long division of moral rectitude is hard to learn; the proof by casting out the 9's of self is hard to master; and it is only by a ceasing from all evil, and a long, continued daily practice of all good, that the fingers unconsciously, by a moral reflex action, touch the keys of self-sacrifice, purity, truth, sympathy, love, and produce the highest, grandest harmony, the melody divine—a true life.

A LESSON FROM THE APIARY.

BY C. M. DRAKE,
[Scenega, Ventura County.]

"IT is none of my business," said Prof. Downy, as he gazed upon the rows of honey-cans that Mr. Beman was preparing to case, "but I *should* like to know what the average income from your apiary is. I see here three hundred cans, each can holding over sixty pounds of honey, which you say is now worth seven and one-half cents per pound here. That makes \$1,350. Out of that, you say the clear profit is over \$1,050; yet you call this a poor year."

"I have averaged more than \$2,000 a year from my apiary during the seven years I have had this one," replied Mr. Beman. "That is some better than teaching, so far as money is concerned; though it has been somewhat lonely here in the mountains."

"Now, does it look just right," said Prof. Downy, somewhat excitedly, "that you should be able to make that much by working, as you do, a scant half of the time, while I, with years of preparation and experience, and a presumably better education, must labor the whole year round for less than half of what you receive? Truly, teachers are most poorly paid!"

"It looks fair enough to me," said Mr. Beman, smiling. "But are you sure that your preparation, your education for your work, is more thorough than mine? Besides, no one is compelled to remain in any business, if he thinks some other work will pay him better."

"Surely, you would not pretend," said Prof. Downy, in amazement, "to compare a bee-man's preparation for his work with a teacher's preparation for his work!"

"Why not? Let us honestly compare the special work we each did, and see if the one was very much more than the other. As to the result of the work, I will wager my crop of honey against four bits, that I know more about managing bees than you do about managing boys."

"Begin," said the professor, seating himself on a honey-can.

"When I started to keep bees," said Mr. Beman, "I bought sixty colonies of bees and a lot of extra hives and apiary fixings for about \$200, of a man who had made a failure of bee-keeping, and was willing to sell for just

what he could get. I employed a neighboring bee-keeper, who was an enthusiast in his profession, to look over my hives, and direct me how to put everything in order. I worked with him for many a day in return, and thus attended, as it were, a real normal school, in which I was the sole pupil of a skillful enthusiast, who naturally communicated much of his enthusiasm to me. I visited other apiaries to see how others did, and how they handled their bees. How many schools did you visit the first year you taught?"

The professor was silent.

"I carefully inquired into the merits of the various extractors, honey-knives, etc., just as I suppose you inquired about desks, globes, outline maps, etc., during the first year you taught."

"Certainly, certainly," said the professor, hastily.

"I suppose you can give me the name of the best maker of globes," said Mr. Beman, inquiringly, "just as easily as I can name the makers of the best comb-foundation machines."

As the professor did not reply, Mr. Beman continued, "I now began to buy bee-books, and bought 'Root's A, B, C of Bee Culture,' 'Cook's Manual of the Apiary,' 'King's Bee-Keeper's Text-Book,' 'Quimby's Bee-Keeping,' 'Langstroth on the Honey Bee,' 'John Allen's Blessed Bees,' and many other works. I believe I have almost every important work on bees now published. I suppose you have a very complete educational library.

"I have several works on 'Theory and Practice,'" said the professor, hesitatingly.

"Then I read all these books," continued Mr. Beman, "with the hive before me, verifying every point I saw mentioned, by actual experiment, so I should *know* what is so. I suppose you try experiments in the school-room in a similar way."

"Yes, I have made a great many experiments in the school-room," admitted the professor, who could not help thinking he never ought to have tried one-half of those he had made.

"I watched and studied the bees for hours, more closely than most teachers study children. I got a good microscope, and dissected a number of workers, drones, and queens, and learned the names and uses of the parts of their bodies, just as I suppose you studied human anatomy and physiology."

I never had a chance to visit a dissecting-room," admitted the professor; "but I have read several books on anatomy."

"Then you have very little real knowledge," asserted Mr. Beman. "I place very little value upon book-knowledge alone. This is mere second-hand learning."

The other nodded assent, and Mr. Beman continued:

"I subscribed for the *American Bee Journal*, a weekly now, and *Root's Gleanings in Bee Culture*, and exchanged with another bee-keeper for two other bee-magazines he took. I presume you take several teachers' magazines."

I take an eastern paper, and *our district subscribes for the PACIFIC SCHOOL JOURNAL*, so I also read that," said the professor.

"And you do not subscribe for your own home journal of education!" exclaimed Mr. Beman, in amazement. If we had a Pacific Coast bee journal, I should have it, and help it by subscribing, if it cost \$10 a year. To my mind, it shows a great lack of interest in one's work, not to subscribe for one's own local journal. No wonder you teachers get poor pay, if the most of you suffer your best helper to languish for want of proper support."

The professor felt that the reproof was deserved, and remained silent.

"I visit most of the neighboring apiaries once a year," continued Mr. Beman, "to compare ideas and see if they have any new improvements, just as I suppose you make it a point to visit—how many schools?"

"Very few," admitted the professor.

"Then we have our bee conventions, just as you have your teachers' institutes, only we do not get paid by the State for attendance, nor do we call them useless humbugs, as I hear you call teachers' institutes. We talk of methods, exchange stock, advise young beginners, publish our proceedings, and go home more enthusiastic than ever, just as you teachers ought to go from institutes. We are willing to pay for lecturers to come from abroad, while you ask the State to do that, and growl because you have to pay board out of your wages while you attend the institutes."

"But you do not have so many branches to study as a teacher must learn. We have to study botany and—"

"Do we not need to study botany also," interrupted Mr. Beman. "Every intelligent apiarist can tell you of the relative values of buck-brush, the sages, laurel, and other honey-producing plants; can tell the kind of honey they produce, when they bloom, where and under what conditions they grow, and many other things that you book-botanists know very little about. Nearly every number of our bee journal contains more or less botany."

The professor shook his head.

"I think very few bee-keepers have prepared themselves as thoroughly for their work as you seem to have done, Mr. Beman."

"True, and few make a success of it. Many are teachers or apiarists by accident, and not because they are peculiarly qualified for their work. They do not read, study, or try to improve, and value the money they can get above all else; and so they fail. Here teachers have the advantage. A poor bee-keeper loses money, destroys his apiary, and is forced in time to quit; but a poor teacher is well paid for his bad work, and if he is a good fellow, he may be reasonably successful in getting schools. Success in bee-keeping may be measured by money gains; but success in teaching is often unrecognized, poorly paid, and loaded down with misunderstandings. But, while the apiarist escapes the annoyances of ignorant parents and unreasoning children, he misses those rewards which every true teacher receives in greatest abundance."

PRIZE-SHEEP and prize-poems are only good—the former to make candles, the latter to light them.

PRESIDENT GARFIELD.

BY HENRY W. LONGFELLOW.

"E venni dal martirio a questa pace."

THESE words the Poet heard in Paradise,
 Uttered by one who, bravely dying here,
 In the true faith, was living in that sphere,
 Where the celestial cross of sacrifice
 Spread its protecting arms athwart the skies;
 And, set thereon, like jewels crystal clear,
 The souls magnanimous, that knew not fear,
 Flashed their effulgence on his dazzled eyes.

Ah, me! how dark the discipline of pain,
 Were not the suffering followed by the sense
 Of infinite rest and infinite release!

This is our consolation; and again
 A great soul cries to us in our suspense,
 "I came from martyrdom unto this peace."

—*The Independent.*

SEPTEMBER 19, 1881.

BY THOMAS BAILEY ALDRICH.

In their dark House of Cloud
 The three weird sisters toil till time be sped.

CLOTHO.

HOW long, O sister, how long
 Ere the weary task is done?
 How long, O sister, how long
 Shall the fragile thread be spun?

LACHESIS.

'Tis mercy that stays her hand,
 Else she had cut the thread;
 She is a woman too,
 Like her who kneels by his bed.

ATROPOS.

Patience! the end is come;
 He shall no more endure:
 See! with a single touch!—
 My hand is swift and sure!

II.

FIRST ANGEL.

Listen! what was it fell
 An instant since on my ear—
 A sound like the throb of a bell
 From yonder darkling sphere!

SECOND ANGEL.

The planet where mortals dwell!
 I hear it not... nay, I hear!—
 A sound of sorrow and dole!

FIRST ANGEL.

Listen! It is the knell
 Of a passing soul!—
 The midnight lamentation
 Of a stricken Nation
 For its Chieftain's soul!

—*Harper's Weekly.*

LETTER WRITING.

BY JOHN SWETT.

BLACKBOARD MODEL.—IMPORTANT POINTS.

- I. Name of Place, and Date of Writing.
- II. Complimentary Address.
- III. Body of the Letter.
- IV. Complimentary Close.
- V. Envelope Address.
- VI. Postage Stamp.

GENERAL DIRECTIONS.

I. *Date.* If you live in a city, write in addition to place and date the number and street of your residence. This is important in cities having a free post-office delivery.

II. *Complimentary Address.*—*Sir* is very formal. *Dear Sir* is the common business form, and *My Dear Sir* is friendly. There are other forms to be used, according to circumstances and the relations of the writer to those addressed; as, *Dear Madam*, *Dear Sirs*, *Gentlemen*, *Ladies*, *Friend Mary*, *Dear Friend*, *My Dear Friend*; *Dear Father*, *Mother*, *Brother*, *Sister*, *Cousin*, *Uncle*, *Aunt*, etc. To persons other than intimate friends, it is customary to write above and to the left of the *Dear Sir*, etc., the name and post-office address of the person to whom the letter is written. Examples of this form will be found in the models to be hereafter given.

III. *Body of the Letter.*—Do not begin a letter with the old-style formula, "I take my pen in hand," etc. If possible, avoid beginning a letter with *I*. Letters of friendship should be written very much as you would talk to your friends if they were present. Avoid cross-lines and long interlineations. Never close your letter with apologies for haste or lack of time. Make business letters short, clear, and exact. After you have written your letter, read it over carefully; dot your *i's* and cross your *t's*; interline any omitted words, and erase any misspelled words, if it can be done neatly; if not, rewrite the letter.

IV. *Complimentary Close.*—The common business form of closing is, *Yours respectfully*; the common friendly form is, *Yours truly*. According to the taste or the feelings of the writer, other forms may be used; such as, *Yours sincerely*, *Yours affectionately*; *Your son*, *daughter*, etc.

Whatever the form may be, put a comma after it, and sign your name in legible handwriting.

V. *Envelope Direction.*—Write the post-office address in a large and legible hand. The names of many States may be abbreviated, but others should always be written in full; as, *Maine*, *Ohio*, *Missouri*, etc. A careless clerk might easily mistake *N. Y.* for *N. J.*, *N. H.* for *N. M.*, or might think *Miss.* meant *Missouri*. In addressing your friends who live in large cities, write the name of the street and the number of their residence.

VI. *Postage Stamps*.—Put a stamp on the upper right-hand corner of the envelope; and if you use two large sheets of paper, put on two stamps. In addressing strangers on business relating to yourself, enclose a stamp if you expect an answer.

VII. *Titles*.—*Mr.*, *Mrs.*, or *Miss*, are the common titles placed before the names of persons addressed. The title *Esq.* is also used; but in this country, it has no particular meaning. Many persons of good taste prefer the plain name, without *Mr.*, *Mrs.*, *Miss*; or *Esq.* *Messrs.* may be prefixed to the name of a firm or not, according to taste. *Hon.* is properly applied to members of Congress or of State Legislatures, and to heads of departments, either National or State. Officers of the army or navy are to be addressed according to rank; as, Gen., Col., Capt., etc. Clergymen are entitled to *Rev.*, and college or university instructors to *Prof.* Physicians take *Dr.* or *M. D.*; college graduates, *A. B.* or *A. M.*

BUSINESS LETTERS.

I.

SACRAMENTO, October 13th, 1881.

MESSRS. ROMAN, BANCROFT, & Co.,

240 Broadway, San Francisco:

Dear Sirs—Please forward to us by express, without delay—

2 Doz. Hooker's Child's Book of Nature.

1 Doz. Dickens's David Copperfield.

2 Copies of Nordhoff's California.

Yours respectfully,

BRIGGS & NUTTER.

II.

440 WASHINGTON ST., SAN FRANCISCO, October 15th, 1881.

HARPER & BROTHERS,

Franklin Square, N. Y.:

Gentlemen—Your favor of the 4th inst. has just been received, and the business will be promptly attended to.

Yours truly,

CHAS. M. BROWN.

EXERCISES.

I. Address an order to Smith, Brown & Co., requesting them to send you 12 bbs. flour, 40 half-bbbs. brown sugar, 400 lbs. rice.

II. Address a business letter to any one of your classmates, and request an answer to-morrow.

III. You want a copy of Dickens's *David Copperfield*: address an order for it to any book dealer you know.

IV. Address an imaginary business letter to your father, and ask him to correct it. Also, ask him to show you some other business form, such as he uses in his own business, trade, or pursuit.

LETTERS OF INTRODUCTION.

I.

 *Letters of introduction must be unsealed and unstamped.*

SAN FRANCISCO, October 18th, 1881.

HON. CHARLES BROWN,

Washington, D. C.:

Dear Sir—The bearer, Gen. O. H. Stanford, visits Washington on business connected with a Bill now before Congress.

He is an intimate personal friend of mine, and any assistance you may be able to render him will be most cordially acknowledged by

Yours truly,

WILLIAM HAVEN.

II.

CHICAGO, October 20th, 1881.

HON. S. M. BRIGHT, *Superintendent of Public Instruction*,
Sacramento, Cal.:

Dear Sir—I take great pleasure in introducing to you Mr. Andrew J. Smith, who goes to your State to seek employment as a teacher, and for the benefit of his health.

He is an educated, experienced, and capable teacher, who ranks high in his profession, and who merits the confidence of school officers and of teachers. Any school that secures his services will be fortunate.

Yours truly,

D. C. SMITH,

Supt. Public Schools.

III.

BUFFALO, December 1st, 1874.

To whom it may concern:

I hereby certify, that the bearer, George B. Harmon, was for seven years a pupil of the Lincoln Grammar School. He graduated last month with high honors, and I most cordially recommend him as an educated, intelligent, and trustworthy boy. As an evidence of his attention to duty, I may state, that during the seven years of his school life he was neither absent nor tardy.

S. M. WILSON,

Prin. Lincoln School.

LETTER WRITING.

Note.—The test in this exercise is, to write a letter without misspelling a single word.

1. An imaginative letter to the "man in the moon."
2. An imaginative letter to "the old year."
3. A business letter to "John Doe & Co.," ordering a quantity of merchandise.
4. A letter to your best friend.
5. A letter introducing one of your friends to another.
6. A letter in which you apply for a position as clerk, teacher, etc.

A DEFECT IN THE SCHOOL SYSTEM OF CALIFORNIA.

BY WALTER LINDLEY, M. D.

[Member of the Board of Education of the City of Los Angeles.]

GAMBETTA, that ideal orator and politician, recently said: "The bulwark of a republic is intelligence among its people. Since the great national misfortune in 1870, our watchword has been 'more schools.' And with schools we shall cover French territory, north, south, east, and west. Let us spread enlightenment and science. 'Light, more light!' said Goethe in his dying moments. This is my political creed and faith in the future of France."

What is true of our sister republic is emphatically true of the United States. Universal education and enlightenment should be our watchword.

My object in this paper is to call your attention to what I consider a serious defect in the school system of California, and to point out a practical remedy.

Go with me to any large school, public or private, and I will show you at least one or two boys or girls who are almost incorrigible. Ask the teacher about her school, and she will say, "If it were not for that boy, my school would be very pleasant." She points to a boy twelve or fourteen years old, who is in a class composed of children two or three years his juniors.

These hoodlums are always behind respectable children in their studies, and are consequently put just where their evil influences will be the strongest—with children much younger than themselves.

We hear of a boy stealing. On account of his youth he is not prosecuted. He is an irregular attendant at some private or public school. He is suspended or expelled. His parents or guardian go and plead with the teacher, saying: "O, what will become of our boy, if he can't go to school? Then he will be ruined forever! Do take him back and give him one more trial."

The kind-hearted teacher finally relents, and allows the boy, who has meanwhile increased his stock of wickedness, to return to his class. Safely back, he begins to contaminate his classmates. Would you blame the teacher? No. She has simply displayed that kindness of heart and sympathy which we all admire.

Another instance: A boy fourteen years of age is found frequenting houses of ill-fame. He is taken before a justice and lectured, and—turned out on the streets to increase in sin.

Again: a girl thirteen years old is guilty of using obscene language in school. Her teacher finds her a victim of other vile habits. If this girl is expelled from school, she rapidly sinks in iniquity. If she continues in her class, she may ruin others. What shall the teacher do?

I could go on multiplying similar instances indefinitely. Do you wish to see such children associated with yours in private or public institutions of learning? No.

Do you wish to see them turned out on our streets to become confirmed criminals? No.

What shall be done with them? I have spoken of the children who attend school. There is another class far worse. There are one thousand children in the city of Los Angeles who do not attend any school. They are growing up in ignorance and vice. They will form a solid regiment for the great army of California hoodlums, if some steps are not soon taken to educate and reform them.

What is the remedy? My answer is, State reform schools.

What do you mean by State reform schools? you ask me. I mean schools under the supervision of the State, where boys and girls from ten to fifteen years of age could be sent by school trustees or justices of the peace, when such children were proved to be injurious to the morals of a school or community, or when they persistently refuse proper training and education.

The State should secure two tracts of land, containing respectively one hundred and four hundred acres. Then proper buildings for schools, dormitories, and shops should be erected, and a man and wife for each place employed. The man to act as superintendent, the woman as matron.

On the one-hundred-acre tract will be located the girls' reform school. Here will be taught the rudiments of an English education, physiology, botany, and industrial drawing. The pupils will be taught to cook, sew, and, as they showed a special talent, they would be put practically to work at gardening, book-keeping, butter-making, and the raising of poultry.

At the boys' reform school everything will be taught that I have mentioned as necessary branches for the girls—not excepting cooking, sewing, and butter-making—and the cultivation of fruit trees and the vine (with and without irrigation), and stock raising. There should also be shops, where each pupil could learn the trade to which he appeared to be especially adapted.

No pupil who entered either of the schools would be discharged for one year at least, while the great majority would be kept in the institution until they reached their eighteenth year. The success of such reformatories depends on the superintendent and matron. We want earnest, philanthropic, industrious persons for such positions.

The cost of establishing these schools would be comparatively trifling. The land would be gladly donated to the State by the citizens of the counties in which it might appear most desirable to locate these institutions. Twenty thousand dollars would be a liberal allowance for the buildings on each place. Just think of it—only \$20,000 for this grand work! Why, the little tower over the entrance to the Napa Insane Asylum cost nearly that amount, while the whole building cost about \$1,700,000. The cost of maintaining one of these institutions would be the superintendent, \$1,200 per annum; matron, \$600; principal of school, \$1,000; assistant in school, \$600; total, \$3,400. The cost of subsistence would depend on the number of inmates. Very soon—say ten years—the schools would be self-supporting. A number of such establishments in Eastern States are not only self-supporting, but have accumulated money above expenses from the products of their farms and shops.

What a great blessing it would be, if we could send the drinking, thieving, cigarette-smoking boys, who loaf on our streets, haunt disreputable houses, and contaminate younger children, to a home where they would be given a good English education, taught good morals and a means of earning an honest livelihood.

I believe in our American school system in its entirety, from the primary to the high schools, from the high school to the university, inclusive. With Charles Kingsley, that noble Englishman who is overflowing with American ideas, I maintain, that "every man, every child, of every rank, should have an equal chance of education, an equal chance of developing all that is in him by nature, an equal chance of acquiring a fair knowledge of those facts of the universe which specially concern him, and of having his reason trained to judge of them. I say, whatever equal rights men may or may not have, they have this right. Let every boy, every girl, have an equal and sound education. If I had my way, I should give the same education to the child of the collier and to the child of the peer. I would see that they were taught the same things and by the same method. Let them all begin alike, say I. They will be handicapped heavily enough, as they go on in life, without our handicapping them in their first race. Whatever stable they come out of, whatever promise they show, let them all train alike, and start fair, and let the best colt win." I go still further, and assert, that, as the thrifty housewife from time to time inspects her winter supply of apples, picking out here and there the fruit that shows unmistakable signs of rot, putting these into a vessel by themselves, and then with a knife cutting out the rotten specks, and utilizing at once the sound portion, thus, by a little prudence, relieving the sound fruit of the baleful influence of the rotten, and at the same time making the latter useful; so the State should reach forth her benevolent, protecting hand, and relieve respectable children of dangerous associations, by lifting out from among them those youths who show unmistakable criminal tendencies; then putting these bad children in a school by themselves, where, by keeping them employed, giving them good counsel and a practical education, they will be relieved to a great extent of their evil inclinations, and will be finally returned to the public transformed into useful, industrious citizens.

NEITHER the naked hand, nor the understanding left to itself, can do much; the work is done by instruments and helps of which the need is not less for the understanding than the hand.—*Bacon*.

THE highest purpose of intellectual cultivation is to give a man a perfect knowledge and mastery of his own inner self; to render our consciousness its own light and its own mirror. Hence, there is the less reason to be surprised at our inability to enter fully into the feelings and characters of others. No one who has not a complete knowledge of himself will ever have a true understanding of another.—*Novalis*.

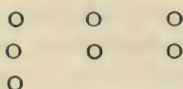
GRUBE'S METHOD.

BY PROF. LOUIS SOLDAN.

[Principal of the St. Louis Normal School.]

ARTICLE II.

GRUBE thinks that one year ought to be spent on the numbers from 1 to 10. He says, "In the thorough way in which I want arithmetic taught, one year is not too long for the most important part of the work. In regard to extent, the scholar has not, apparently, gained very much—he knows only the numbers from 1 to 10. But he knows them." In reference to the main principles to be observed, he demands, first, "that no new number shall be commenced before the previous one is perfectly mastered"; secondly, "that reviews should frequently and regularly take place"; and lastly, "that whatever knowledge has been acquired and fully mastered by illustration and observation must be thoroughly committed to memory." "In the process of *measuring*, pupils must acquire the utmost mechanical skill." It is essential to this method that in the measuring which forms the basis for all subsequent operations, the pupils have before their eyes a diagram illustrating the process. It matters not by what means of objects the pupils see the operation illustrated, whether fingers, lines, or dots; but they certainly must see it. It is a feature of this method, that it teaches by the eye as well as the ear, while in most other methods arithmetic is taught by the ear alone. If, for instance, the child is to measure 7 by the number 3, the illustration to be used is:



If lines or dots are arranged in this way, and impressed upon the child's memory as depicting the relation between the numbers 3 and 7, it is, in fact, all there is to know about it. Instead of teaching all the variety of possible combinations between 3 and 7, it is sufficient to make the child keep in mind the above picture. The first four rules, as far as 3 and 7 are concerned, are contained in it, and will result from expressing the same thing in different words, or describing the picture in different ways. Looking at the picture, the child describes it, or reads it, as:

$$3+3+1=7, \text{ or } 2 \times 3+1=7, \text{ or } 7-3-3=1, 7 \div 3=2 (1).$$

The latter process to be read: From 7 I take away 3 twice; and 1 remains; or, 7 contains 3 twice and 1 more.

Let the number to be measured be 10, and the number by which it is to be measured be 4; then, since the way to arrange the lines or dots for illustration is to have as many dots or lines as is indicated by the larger number, and as many of these in a row as is indicated by the smaller number, we write:



The child will be able to see at once, by reading the diagram, as it were, that

$$4+4+2=10, 2 \times 4+2=10, 10-4-4=2, 10 \div 4=2 (2),$$

and to perceive at a glance a variety of other combinations. The children will, in the course of time, learn how to draw these pictures on their slates in a proper way. Nor will it take long to make them understand that every picture of this kind is to be "read" in four ways, first using the word *and*, then *times*, then *less*; then, *From... can be taken away... times*. As soon as the pupils can do this, they have mastered the method and can work independently all the problems, within the given number, which are required in measuring. It would be a mistake to suppose that, in teaching according to this method, memory is not required on the part of the child. Memory is as important a factor here, as it is in all instruction. This should be emphasized, because with some teachers it has become almost a crime to say that memory holds its place in education. To have a good memory is, in their eyes, a sign of stupidity. Grube was too experienced a teacher to fall into this error. While by his method the results are gained in an easier and more natural way, whatever result is arrived at must be firmly retained by dint of memory assisted by frequent reviews.

FIFTH STEP.—*The Number Five.*

I. The pure number.

a. Measuring.

(1) By 1.

					5	
		1			$\left\{ \begin{array}{l} 1+1+1+1+1=5. \\ 5 \times 1=5. \\ 5-1-1-1-1=1. \\ 5 \div 1=5. \end{array} \right.$	
		1				
		1				
		1				
		1				

(2) with 2.

			2	$\left\{ \begin{array}{l} 2+2+1=5. \\ 2 \times 2+1=5. \\ 5-2-2=1. \\ 5 \div 2=2 (1 \text{ remainder}). \end{array} \right.$
			2	
		1		

(3) by 3.

				3	$\left\{ \begin{array}{l} 3+2=5, 2+3=5. \\ 1 \times 3+2=5. \\ 5-3=2, 5-2=3. \\ 5 \div 3=1 (2 \text{ remainder}). \end{array} \right.$
				2	

(4) by 4.

					4	$\left\{ \begin{array}{l} 4+1=5, 1+4=5. \\ 1 \times 4+1=5. \\ 5-4=1, 5-1=4. \\ 5 \div 4=1 (1 \text{ remainder}). \end{array} \right.$
					1	

The fingers are the best means of illustration here: "Hold up your left hand. How many fingers are you holding up? Hold the thumb away from the other fingers. How many fingers here? (1); here? (4). 1 finger taken from five fingers leaves how many fingers? 1 from 5 =? 4 fingers + 1 finger =? $4 + 1 = ?$ Hold your first finger and the thumb away from the other fingers, $5 - 2 = ?$ $3 + 2 = ?$ $2 + 3 = ?$ " etc.

5 is 1 more than 4, 5 is 2 more than 3, five is 3 more than 2, 5 is 4 more than 1. (All the solutions to these examples are the result of observation from illustrations placed before the eyes of the class; without them this kind of instruction is worthless.)

4 is 1 less than 5, 4 is 1 more than 3, etc. 3 is 2 less than 5, etc. $5 = 5 \times 1$. $1 = 1 \cdot 5 \times 5$ (1 is the fifth part of 5). 5 consists of two unequal numbers, $3 + 2$. 5 consists of two equal numbers and one unequal number, $2 + 2 + 1$.

b. Practice in the rapid solution of examples. (It would be a great mistake to drill on the same example until the pupils can remember it. Such a practice would be worse than valueless. Every example should be a new one to the pupil, and the faculty appealed to should be judgment as well as memory.)

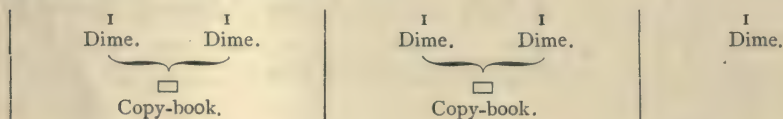
$5 - 2 - 3 + 2 \times 2$, one half of it less 1, taken 5 times. $2 \times 2 + 1 - 3 \times 1 \times 2 - 3 + 4?$ etc.

c. Combinations.

What number is one fifth of 5? How many must I add to 3 to get 5? How many must be taken away from 5 to get 3? How many times 2 have I added to 1 in order to get 5? I have taken away twice 2 from a certain number, and 1 remained. What number was it? etc.

II. Applied numbers.

How many gallons are 2 quarts? Charles had 5 dimes; he bought two copy-books, each one of which cost 2 dimes. What money did he keep? (This the teacher must make plain by means of lines and dots.)



Henry read a lesson three times; Emma read it as many times as he did, and two times more. How often did she read it? Father had five peaches, and gave them to his three children. The youngest one received one peach; how many did each of the other children receive? etc.

SIXTH STEP.—The Number Six.

I. a. Measuring.

$\left. \begin{array}{l} aa \text{ with } 1 \\ bb \text{ with } 2 \\ cc \text{ with } 3 \\ dd \text{ with } 4 \\ ee \text{ with } 5 \end{array} \right\}$	Each process illustrated by six lines, of which as many are placed in a row as are indicated by the number by which 6 is to be measured.
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ff Miscellaneous examples.

b. Rapid solution of problems.

c. Combinations of numbers.

II. The applied number.

MEN resemble the gods in nothing so much as in doing good to their fellow-creatures.—*Cicero*.

THE SANDWICH ISLANDS.

TEACHERS in California probably know little of educational matters in this far-away region. I will therefore hope to interest them by writing what facts in the connection I have gathered during my short sojourn here.

The entire population of these Islands is not far from 60,000; natives, 44,000; half-castes, 4,000; Chinese, 6,000; Americans, 3,000; other nationalities, 3,000. There are over 200 government schools on the islands, with about 8,000 pupils, showing a large excess of boys. Seventy-nine per cent. of the children are pure Hawaiians, fourteen per cent. half-caste, and seven per cent. whites. There are two classes of schools—one class in which pupils are taught in the native language exclusively; and the other class, called English schools, in which the children are only taught in the English language. Both are supported by government. There is at Honolulu a national board of education, which has charge of the educational department of the Islands. It employs teachers, pays them by draft on the Royal Treasury each month, and has control over all the schools through a school law.

These teachers are located wherever the board chooses, and render their reports quarterly. They are required to teach forty-two weeks yearly, having ten weeks in the three vacations assigned; one being in the spring, of one week; one in the summer, of seven weeks; and the other at Christmas, of two weeks. They are required to teach five days in a week and five hours in a day, which include two daily recesses, one of fifteen minutes and the other of half an hour. The schools begin at 9 A. M. and close at 2 P. M., daily.

So far as I know, none attend the government schools from among the pure whites, as there are many select schools and boarding-schools for such, at fixed rates of tuition, carried on by private enterprise. Of course the native schools are primary, and are taught by native teachers, at moderate salaries. But the English schools supported by government usually have a white principal, assisted by white and native teachers, the latter speaking English; for all instruction given in them is through the English language. The school-houses are generally good, for the English schools at least—as good as the average of country school-houses in California—and they are supposed to be well equipped with maps, charts, and other paraphernalia of first-class schools; all supplied by the board of education.

The fund set apart by government for running these schools is ample, and teachers in the English principalships get from \$1,000 to \$1,500 a year, payable, however, in silver coin, which must pay a premium of about two and a half per cent. to get gold; as the silver coin is mostly French and Mexican. Only a small number of teachers get more than \$1,000, and these are such as have been for some time in the service of the board, and well approved. In fact, I know of only one who gets \$1,500—Prof. A. G. Brown of Hilo, who taught some years in California.

Many teachers are engaged in San Francisco from time to time, and such as have certificates there and have had considerable experience are not subjected to any examination here.

Information can be had in regard to situations here by applying to Mr. H. W. Severance, Hawaiian Consul, 316 California Street, San Francisco. There will undoubtedly be several vacancies here by next summer. Still, first-class teachers in California can hardly be induced to accept them, as they can generally do better at home. Some, however, whose health demands a change, and such a climate as this, would be glad to come, no doubt. Lady teachers are not employed to any great extent, as they would hardly be pleased with the associations amid a semi-civilized population; yet a few such are employed in the larger towns as assistants; but the salaries given are no inducement.

Life here is very monotonous, and teaching Kanaka children is quite a different thing from teaching bright white ones in California.

Very few native children here are advanced beyond the simple rudiments of English. I believe they are easily governed, at least the pure natives. The half-castes are perhaps more intractable. But the school laws here are good, and a man with a missionary spirit may be content.

The climate of the Islands is good—never frost—the mercury getting seldom above 85° or below 60° during the entire year. Honolulu is an exception, being quite warm at times, and not pleasant. Of course, there are in many places mosquitoes and fleas; but no snakes, frogs, or toads. It is not very distinctly a tropical country, and persons coming here will not see the profusion of tropical vegetation expected. A residence on the windward side of the Islands is preferable to the leeward; but nowhere is it as hot as in the Sacramento Valley, and everywhere is it wonderfully beautiful. Steamers from San Francisco monthly; passage from \$30 to \$75; distance, 2,100 miles; time, one week. Sailing vessels carry passengers at \$40, and are from twelve to sixteen days coming down. The trip is a pleasant one generally in summer. The government here is a good one, and there are no places outside of Honolulu where liquor is sold. Sunday is observed almost as rigidly as in Connecticut, as the natives nearly all go to church. They are friendly and harmless, a little loose in their ideas of sexual commerce; but hospitable and kind. I think they behave as well, probably much better, than the average white man here. But, after all, a residence among them is not so agreeable as with our own race; as so many elements of a higher civilization are lacking.

They are rapidly diminishing. Contact with the white race has brought in venereal diseases and small-pox, and the Chinese have introduced leprosy. Their blood is now impure, and few children are born. A kind and beneficent government is doing all it can to prevent their ultimate extinction, by educating them in English, by enforcement of sanitary laws, and providing physicians and medicines gratuitously.

Yours truly,

T. H. R.

A TRAINED hand at one end of the arm, and a trained head at the other, is what is needed.

EDITORIAL DEPARTMENT.

THE CREDIT SYSTEM.

THE strictures of the JOURNAL, in its August issue, on the management of the San Francisco schools, have evidently produced some effect. So, at least, are interpreted unusual signs of activity in the department. A recent meeting of principals and first and second grade teachers, followed by a meeting of first and second grade teachers alone, together with an intimation that an institute of the teachers of the department would soon be called, may be a coincidence; if so, the good sense of the idea is none the less praiseworthy.

At the meeting of first and second grade teachers, two questions were presented for consideration and discussion. The second of these—embracing really a number of questions—is of such importance and general interest as to commend itself to the attention of all in any way identified with education.

It was suggested by the superintendent and deputy that one subject, United States history, should be taken up with the text-book as a reader; that the recitation system should be abolished; that the teacher should converse with pupils on the lessons, give them some idea of contemporary history, and refer them to further sources of information, thereby turning their attention to the broad field of literature, and inculcating a taste for reading. They further recommended that no credits be given for history, and that the study should not be counted in the yearly markings for promotion. Incidentally, the subject of markings, percentages, and examinations came up, and the discussion finally centered around these points. The superintendent appeared to condemn percentages as diverting the learner's attention from the true end of education, *i. e.*, the acquisition of knowledge. As between oral and written examinations, he seemed to favor the former as more conducive to a proper expression of ideas. He emphasized the fact that the yearly examinations have a decided tendency to promote cramming. He evidently labored under the impression that with much good teaching there is also considerable machine work, which it would be a decided mistake to call teaching at all. His remedy, so far as understood, was to do away with percentages, and to substitute oral for written examinations.

We believe the JOURNAL has here given a fair statement of the views and suggestions of the principal educational official of San Francisco. Let us examine these views by the light of common sense, experience the world over, and the principles of the science of education.

It is well first to realize the object of all school training. This is not so much to communicate facts, as to develop power. We use the term "cultured" or "educated" to denote a condition where the full perfection of the mental being has been attained. Here, then, is the end of school training. But it must not be forgotten that knowledge is itself but a means, and not an end. Its true objects are freedom and contentment; or better still, to promote the welfare of all mankind. We learn, we know, that we may be free from sordid cares, from physical ailments, and from moral suffering. However, considering the acquisition of knowledge as the sole end of school training, what means shall be used to attain that end?

The theorist dismisses the subject with the euphonious platitudes, "Make children love knowledge for its own sake:" "Interest them in their daily tasks, and they will learn instinctively."

Will they? Do men and women progress in knowledge for mere love of knowledge? Are our teachers generally more cultured, better read, ten years after leaving school than at graduation? Is it love of knowledge *per se* that incites the aspiring few to battle with every opposing circumstance, to surmount every obstacle, to tear down the barriers which caste has raised around them, to overcome the flaws of their nature—all to look down from the heights on their fellow-men? Was it love of abstract mathematics that led Newton to labor for weary years amid the intricacies of the infinitesimal analysis? or Laplace to originate the calculus or the science of probabilities? or did Herschel, the founder of sidereal astronomy, with patient ken number up the stars that nightly swept by the field of his telescope, just to know for himself and by himself what these things were? Has not every sage whose prophetic eye could scan the borders of the infinite, pondered out these problems that the soul of mankind, as well as his own soul, might be lifted up to greater wisdom and godlikeness?

In the *Popular Science Monthly* for October is a leading editorial by that eminent scientific editor, Dr. E. L. Youmans, which is singularly germane to this point, of love of knowledge for its own sake. He says :

"In the childhood of knowledge it (the Medieval philosophy) entered upon speculations which could yield no valid results, and came at length to consider that valid conclusions, being impossible, were undesirable. But, as active thought could not be stopped, it was concluded that the virtue of philosophy consists merely in the mental exercise it involves. And, as philosophy had proved useless as a means of arriving at assured truth, its uselessness was claimed to be a merit. And so utility, or the value of results attained, both in themselves and in their practical service to man, was explicitly repudiated. Alike in old Greece and in modern Germany—from Plato to Hegel—this has been the philosophic teaching, and we have seen the doctrine solemnly promulgated in our own times. . . . Now, when this old philosophical notion that truth, for itself and for its uses, is not the proper end of study, is still theoretically maintained in our colleges and universities to be the first law of all liberal education, we need not be surprised at the extent of the ignorant prejudice against science, and that the influence of this prejudice should still be widely manifested. . . . Holding that truth is to be supremely valued for its own sake, and that philosophy is justified in its truth alone, Mr. Herbert Spencer finds that the highest truth involves also the highest good, and his system thus becomes nobly tributary to the advancement of human welfare. . . . Spencer's philosophy assumes this higher sphere of beneficent influence, and throughout its whole development it bears upon the final and regnant problem of the regulation of human conduct."

Children cannot comprehend the abstract beauties of knowledge; their attention cannot be continuously concentrated on the important principles of any one branch for even an hour. In fact, with children, as with savages, it is the bright and showy covering that attracts; the substantial kernel of knowledge within is apt to be disregarded or unpalatable. Take, for illustration, the science of physics, which above any other, calls for the active participation of all the faculties of the learner; of what service are experiments with falling bodies, unless the pupil deduces the laws of the velocity of such bodies, of their momentum and striking force, and fixes accurately on the tablets of his memory those laws for some future emergency?

The doctrine of learning for wisdom's own sake is, above all, selfish to the core. It is like the miser's gathering gold for the sake of the hoard. We believe every practical teacher can adduce an unlimited number of examples to show that some more powerful and immediate incentive than love of knowledge is needed to secure its acquisition. This means is now found in some system of rewards or deprivation from rewards. It is hardly necessary to point out that our whole social structure is based on this system. It is the foundation stone of government, the handmaiden of religion, the method of Nature herself.

When children grow up to manhood and womanhood, every deed and thought is measured and determined in accordance with this principle. As children even,

they see it is so around them; they imbibe it with their earliest impressions. So in school it is right and proper to adopt the standard and fix the scale, as far as possible, to imitate nature. It is wise to say to the studious and the deserving, "Your place is head"; to the indifferent or the idle, "You belong to the foot."

How this shall be done; whether the teacher shall become a mere recording machine for the pupil; whether by oral or written examinations, held weekly or monthly or yearly—is quite a different question.

We believe the written examination system has been overdone, especially in our cities. We think oral examinations have very properly been abandoned as time-wasting, inaccurate, and partial. Daily markings seem more wasteful still of time and attention. We believe that in this matter, as in every other, "the golden mean" is the only safe, the wisest, path.

The judicious teacher will so use credits and percentages, that the learner cannot but realize that these are merely symbolical of so much honest effort, of so much intellectual labor done.

With the true teacher, every child feels this symbolism intuitively; with the pretender, this system, or the most perfect the mind can invent, will be perverted, and the end lost sight of in the struggle for the visible means.

And here is another error which with competent superintendence should never be made. In no sense should the ability or success of the teacher be measured by the standing of her class. The yearly examinations and percentages show this only—what progress has been made by the pupils. And this may vary by reason of bright or dull children, by regular or irregular attendance, by good or ill preparation for the grade. There is but one way to test a teacher's efficiency, and that is by visiting her class, not for two minutes occupied in vapid compliments on the intelligent appearance of the pupils or the hard work of the teacher; but for two or three hours, or, better still, an entire day. The teaching of every subject on the programme should be observed, the teacher's manner marked, her general methods closely scanned, and the mutual bearing of class and teacher noted. In this way, the intelligent and wise superintendent will classify a teacher as good, bad, or indifferent better than all yearly examinations; and at the same time take away what is now the strongest incentive to steady, thoroughly-systematized cramming.

VISIT OF COMMISSIONER EATON TO THE PACIFIC COAST.

A NOTABLE event in educational circles on this Coast is the visit of Gen. John Eaton, head of the Bureau of Education at Washington. He arrived in San Francisco, after a brief stay at Sacramento and Woodland, on the 12th of October; and after visiting the two high schools on the 13th, addressing a meeting of Congregational clergymen, and Mrs. Cooper's Sabbath School Class on the 15th, he departed for Oregon on the 18th, to return in about two weeks.

Gen. Eaton is a gentleman of medium height and dignified presence, apparently about fifty-five years old. His full beard and flowing hair are decidedly gray, and tend to confirm the impression of kindness which his features convey. In manners he is cordial, and disposed at once to learn all concerning the social and educational condition of our slope, and to impart a knowledge of the status of other sections of the Union.

On his return from Oregon, he expects to visit the southern portions of the State, and also to examine the school systems of other sections. Our superintendents and teachers generally will therefore have an opportunity to meet him and make his acquaintance.

To John Eaton belongs the credit of the organization of the National Bureau of Education; and but for his efficient management, indomitable energy, and personal influence, Congress would have abandoned it long ago. Gen. Eaton's work has firmly established it as an engine destined to play an important part in nationalizing the American States.

While this idea of unifying the various State systems is not as yet acknowledged as within the scope of the activity of the Bureau, we believe it will eventually come to this and that then the Commissioner, by some other title, will occupy a seat in the Cabinet.

"THE TWIN EVILS."

MUCH interest has been awakened in the San Francisco schools, on the subject of intemperance, by Dr. McDonald's noble benefaction, of which we wrote in our August number. As we then stated, the greatest good accomplished has undoubtedly been through the unconscious influence of the little ones on their parents.

In order to render the work as effective as possible, Dr. McDonald has increased his benefaction to \$1,500. One thousand of this is to be distributed in San Francisco, among the pupils of the high, grammar, and primary schools. The time during which preparation for the essays is to be made has been extended until Friday, November 4th. On that day the essays are to be read in the respective classes, and the best four or five in each class sent on, or before November 14th, to the office of the superintendent.

Five hundred dollars will be distributed among the high schools of the State, outside of San Francisco. Time will be given in these schools until May or June next.

We make these statements for the benefit of superintendents and high school principals in the interior, who are referred for fuller details to the president of the Woman's Christian Temperance Union, Mrs. P. D. Browne; or the secretary, Mrs. M. E. Congdon, 314 Sutter Street, San Francisco.

CHANGE OF NAME.

COMMENCING with the January number, the JOURNAL will curtail its name to the THE PACIFIC SCHOOL JOURNAL.

The reasons for the change are obvious. The home department of the JOURNAL has always been but nominal; and it is thought best that our title should conform exactly to our performance.

The literary and educational conduct of the JOURNAL will be in the same general direction as in the past. It is now believed that with the opening of its sixth volume its usefulness will be firmly established, and that its course, educationally and financially, will be onward and upward.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, EDITOR.

PLACER COUNTY.

O. F. SEAVEY, Superintendent.

The schools, in my opinion, have made sure and thorough progress during the last school year. The interest of the people in the schools is awakening, and it appeared to me, while making my round of visits, that their interest is fast increasing. We shall have eventually an educated public opinion concerning schools and methods of teaching, and then every year will add to their usefulness. Many of our teachers have had large experience, and they have used it to the advantage of the pupils under their charge. Some few teachers have enjoyed a course of special training, and accomplished a fair success. When they shall have acquired practice, their success will be complete. Upon the whole, our corps of teachers is excellent. The schools have been very much benefited by the retention of teachers for several successive terms; and thus the children have been advanced, while holding fast the fruits of the labor of previous terms. Parents and trustees have at last opened their eyes to the benefits arising from holding fast to a tried and faithful teacher. The change of opinion in this respect has done great good to our mountain schools. The terms of many schools have been short; but the teaching has been more thorough on this account, as the teachers expected brief terms, and accordingly labored to do their best. I think it can be said in all truth, that the schools of Placer County are in a prosperous condition. I think the changes in the school law, made last winter, were wise and beneficial, especially the one requiring an attendance of more than five pupils for three months. By reason of this change, I discontinued two districts that could not be reached by any provision of the old law. I think it advisable to allow trustees a small salary, thus making them amenable to the law for neglecting to return their full reports at the time required by law. Also, that the auditor should keep a set of books, or have nothing to do with the school money.

SAN BENITO COUNTY.

J. N. THOMPSON, Superintendent.

The schools are in good condition, there being less inclination on the part of parents to exchange teachers every term. The schools are better supplied with furniture and apparatus than heretofore. Four new districts were formed by the board of supervisors in June.

SAN BERNARDINO COUNTY.

J. A. ROUSSEAU, Superintendent.

The schools throughout the county are in good condition. The returns show an increase of seventy-six pupils enrolled over the preceding year, an increase of one per cent. in percentage of attendance over the last year. In attendance at private schools there are forty-four more than the preceding year. This may be explained by the building of a large establishment under the control of a religious institution in our town for educational purposes. Percentage of children attending public schools (on census returns, 2,460), 77; percentage preceding year (2,428), 75.

With respect to the California school law, the interposition of "warrant drawing" by the county auditor is simply superfluous. So far as it applies to this county, it is unnecessary, and serves no purpose whatever. This county, since its organization, has been exceptionally fortunate in having officials who have not only been above suspicion, but have not been suspected of fraud; and as the law is framed, so far as the school

department is concerned, it would be difficult to see how the present method could prevent fraud, if attempted. In a general review of amendments to the school law, the superintendent of Santa Clara County (see JOURNAL, ninth report) is pretty generally indorsed in San Bernardino: "I would respectfully suggest, that the school law be tinkered with just as little as human nature will permit; as the more it is changed, the worse it becomes."

SAN DIEGO COUNTY.

GEORGE N. HITCHCOCK, Superintendent.

The public schools of San Diego County were never in a more prosperous condition and their efficiency will greatly increase in the immediate future. A greater interest in and higher appreciation of the value of our common schools are exhibited throughout the county, while also its assessed valuation increases about 50 per cent. annually.

The greatest drawback during the year was the large deficit of some \$5,000 in our county school fund, occasioned by the refusal of the Southern Pacific Railroad Company to pay its taxes, whereby each one-teacher district received but \$117.43, against the *estimated* amount of \$250. Yet the country schools have been better taught, and for longer terms than usual, the average being above seven months.

Itinerant teachers and short terms have been much to our detriment. The former difficulty is mitigated by an approximate uniformity in the school terms of the various districts, and a strict discretion on the part of the board of education in recognizing certificates issued elsewhere. No educational tramp can get further than a temporary, should he be able to get that, although he may be the holder of a Life Diploma. The qualifications of teachers have not been high enough. Heretofore isolated, without rail connections, there lacked lively competition between teachers for our schools. Many miners holding third-grade certificates acted as teachers, and the county had little or no representation at the State Normal. This condition of things is now changed. San Diego is largely represented at San José, and no teacher is now recognized on the basis of a third grade.

Trustees, too, are generally awakening to an appreciation of their duties and responsibilities. In a number of districts, the census is taken gratis, and in many at a nominal figure, or the amount is donated for furniture or the library. With but few exceptions, country board has been reduced to fifteen dollars per month, and frequently lower; the district feeling bound to make such an arrangement to secure as long a term as possible.

The board of education fully recognizes the importance and honorableness of the profession of teaching, and in conformity therewith in its examinations it may have raised the standard of its qualifications. Yet no teacher, who upon a temporary certificate has demonstrated his capacity and success, will be subjected to an examination, unless such is made requisite by law; and then, as to such, the examination will be formal as near as is possible. A successful standing in the profession will be held to merit the kindest and most honorable consideration.

The city schools have suffered most by reason of the large deficiency in the county fund. The term was reduced to six months, with five teachers for four, and two teachers for two months, where there should have been ten months with six teachers. The city, however, has redeemed itself by voting bonds for a \$15,000 school building, the lumber for which has been most nobly donated by Hon. Joseph Russ of Humboldt.

The Teachers' Institute convened November 29th, 1880, at Horton's Hall, in the City of San Diego, continuing five days, Supt. Hitchcock presiding. Some thirty teachers were present and took part in the exercises. Weeks beforehand, topics had been assigned to each teacher, so that there was no lack of essays, recitations, discussions, and demonstrations. The conventional idea, that an Institute is for the purpose of hearing learned essays from foreign professors, concerning the relative claims of a classical and scientific education, was certainly disregarded. This one was largely committed to the teachers themselves,

it being presumed that a competent teacher interested in his profession ought to be able to present before an Institute audience some interesting demonstration, experiment, or essay, and it might be a good provision to require such work yearly from each teacher, their essays to be filed in the superintendent's office. Certainly any teacher who has spent weeks in the careful preparation of such an essay will receive benefits therefrom for a life-time.

In this instance the essays of Miss Emma Tounley upon Physical Culture, of Miss Maggie Varty upon Kindergarten Work, and Miss Ella M. Davis upon the Teaching of Language, with their contributions towards the general success of the Institute, will merit mention. Hearty thanks were given to Dr. E. S. Carr for his two evening lectures and practical instruction in Chemistry, and to Mrs. Julia D. Carrothers for her exceedingly interesting description of Japanese Life and Customs.

In several respects the Institute was a success. The attendance and interest manifested could not fail to prove of advantage to the cause of education. It materially aided subsequently in obtaining at the polls the two-thirds vote for the city grammar school building. It has contributed to an honorable emulation between the different schools with their teachers to make creditable displays of their regular term work and progress. The due consideration of the more conspicuous defects in the county schools brought before the Institute in the superintendent's address, and the general agreement as to the necessity of remedying them in the future, with practical suggestions as to the proper course to be pursued, cannot fail to prove of advantage. Certainly where an Institute unanimously resolves, that a higher qualification for teachers should be required; that teachers must be held responsible for the discipline of their schools; and that they thoroughly teach the three R's by review and re-review, making thoroughness an indispensable necessity; then both the board of education and the superintendent will be more likely to see to it that the spirit of such resolutions is carried out to the letter.

SAN JOAQUIN COUNTY.

C. M. KENISTON, Superintendent.

In my opinion, during the past year the schools of the county have made good progress, at least the advancement made will compare favorably with that of years past. Most of the teachers have been earnest, faithful workers; and, as a result, children have been interested and good results obtained. One great fault, it seems to me, and one that is working an injury to our present system, is the frequent change of teachers. The best schools under my charge are those where teachers have been retained the greatest length of time. Several districts have been unable to keep school six months, as the law requires; but it has not been the fault of the district.

Taking everything into consideration, I think the friends of education have every reason to be encouraged by the outlook in San Joaquin County.

SANTA CLARA COUNTY.

L. J. CHIPMAN, Superintendent.

The schools of this county have made satisfactory progress during the past year. We have an energetic corps of teachers who are well prepared for their work, and they take pride in doing it in a thorough manner.

A majority of the trustees recognize the fact, that frequent changes of teachers are very detrimental to the best interests of the school, and as the result of this conviction they retain good teachers as long as possible.

Fifty-six districts out of a total of sixty-one have maintained school eight months or over—a large number ten months.

The school law is, in the main, quite satisfactory, and I would recommend, just for the novelty of the thing if for nothing more, it be let alone for at least one session of the Legislature, just to give school officers and teachers time to see how it will work.

SAN LUIS OBISPO COUNTY.

J. F. BECKETT, Superintendent.

Six new districts have been organized. The trustees and patrons of schools are generally in accord with our work. Our teachers are first class, enthusiastic, and capable; attendance at schools generally good; and the educational outlook will be quite satisfactory when the office of county superintendent is sufficiently salaried to warrant that official in devoting his whole time and his best energies in superintending the schools of the county.

The school law should be so amended that the *pro rata* apportionment would be based upon the aggregate, instead of the average, attendance, as now.

SANTA BARBARA COUNTY.

G. E. THURMOND, Superintendent.

The schools of this county have made fair progress during the past year. The liberal provision in the way of county school tax made by the board of supervisors has enabled those districts poorly supplied with furniture to supply themselves with improved furniture, thereby providing seats for all pupils who may wish to attend.

While the census report shows an increase of sixty-nine children of school age, the number enrolled is 240 more than last year, and the average number belonging is proportionately increased.

The teachers have, with few exceptions, been interested in their work, and have been engaged to teach the same schools another year.

SHASTA COUNTY.

MRS. D. M. COLEMAN, Superintendent.

It will be seen by the accompanying statistics, when compared with those of the preceding year, that there has been a slight falling off in the census roll, yet the average daily attendance has increased somewhat. This is owing to the establishment of school districts in more remote and sparsely settled sections of the county. Four new districts have been established during the year, and five new school-houses erected. There is, however, a deplorable lack of convenience in many of the districts, which we hope in time to remedy. Our teachers are for the most part efficient and earnest in their work, the great majority holding first-grade certificates, honestly obtained; and it is a noticeable fact, that our best teachers subscribe for and read some educational journal.

Trustees and patrons are alive to the fact that it pays to retain a good teacher, and, as will be seen by our report, many of our best teachers remain in the same school for several successive years.

Concerning amendments to the school law, much may be said. In my opinion, either the State Board of Education or each county board should have the power to adopt a list of books for district school libraries.* Again, the law should specify the maximum amount of county funds which may be used for supplies and incidental expenses. Further, the superintendent should have power to nominate proper persons for the board of education; also, in case of vacancy, to fill the same, when the board of supervisors fail to do so.

The Amador County Institute, which was in session during the last three days of September, was, to say the least, as good as the average. There were 46 teachers in attendance, and many valuable ideas exchanged. Prof. T. C. George, of Pacific University, was engaged for the occasion, and his lectures and demonstrations in various departments of natural science, were highly interesting and instructive.

*The power to adopt a list of library books is now vested in the county board of education. [F. M. C.]

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. MCCHESENEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN NOVEMBER.—*Mercury* crosses the sun's disc on the 7th and 8th. His nearness to the sun renders observations with the naked eye impossible during this month. He is in inferior conjunction on the 8th, and stationary among the stars on the 16th. *Venus* is a morning star, rising on the 7th at 4:4 A. M.; on the 17th at 4:35 A. M.; and on the 27th at 5 A. M. She is near the moon on the 20th. *Mars* rises on the 6th at 7:34 P. M.; on the 16th at 6:20 P. M.; and on the 26th at 5:28 P. M. He is near the moon on the 10th, and stationary among the stars on the 17th. *Jupiter* rises on the 6th at 4:6 P. M.; on the 11th at sunset; after this date he rises in daylight. He is near the moon on the 6th. *Saturn* rises on the 3rd nearly with the sun, and after this day in daylight. He is in opposition to the sun on the 1st, and near the moon on the 6th.

FIRST they invent a torpedo that will destroy anything, and then they get up a contrivance that will make a ship invulnerable. The Inflexible of the British navy is to be fitted with nets for defense against torpedoes at an expense of £3,000. Now it is the turn of inventors to contrive something that will make the defensive nets useless.

DR. NICHOLS, in the *Journal of Chemistry*, tells how to reduce bones with ashes for fertilizing purposes. He says, "Break one hundred pounds of bones into small fragments, and pack them in a tight cask or box with one hundred pounds of good wood ashes, which have been previously mixed with twenty-five pounds of dry water-slaked lime and twelve pounds of powdered sal soda. Twenty gallons of water will saturate the mass, and more may be added as required. In two or three weeks the bones will be soft enough to turn out on the barn floor and mixed with two bushels of good soil."

WHAT are the effects of different kinds of intellectual work on the cerebral circulation? This question M. Gley, a French physiologist, has attempted to answer by experiments made upon himself. When he applied himself to a subject which he had a difficulty in understanding thoroughly, and had, therefore, to concentrate all his energies upon it, the rhythm of the heart was far more accelerated than when he took up some matter with which he was well acquainted.

THE London *Athenæum* says that M. Jamin has made a considerable advance in the arrangements of his electrical candle. He encloses his carbon loop in a carefully closed vessel containing air. The electric action at first produces the combination of the oxygen and nitrogen of the atmosphere, and the usual colored vapors are seen; these are soon destroyed by the oxygen combining with the carbon, nitrogen and carbonic oxide alone remaining in the glass globe. The phosphorescent arc then becomes quite fixed, giving light of a greenish-blue tint. Each candle by this arrangement lasts one hundred and sixty hours.

PASSENGER BIRDS.—According to a writer in *Nature*, the small migratory birds that are unable to perform the flight of three hundred and fifty miles across the Mediterranean Sea are carried across on the backs of cranes. In the autumn, many flocks of cranes may be seen coming from the north with the first cold blast from that quarter, flying low, and uttering a peculiar cry, as if of alarm, as they circle over the cultivated plains. Little birds of every species may be seen flying up to them, while the twittering songs of those already comfortably settled upon their backs may be distinctly heard. But for this kind provision of nature, numerous varieties of small birds would become extinct in northern counties, as the cold winters would kill them.

THE NEW CONCENTRATED HEAT.—The story of concentrated heat, which comes from Paris, has not been authenticated to a degree which allows of indorsement, but the process of the inventor is so simple, and the benefits to be derived from its success so great, that the fullest investigation should be given, and if practice is as perfect as theory, the bushel should early be lifted from the inventor's light, and the world have the benefit of its rays. The inventor, M. Carrière, terms his storage apparatus a thermophere, and describes it as a box filled with thin layers of metal, which contain the heat, and which are covered and separated from each other so as to retain it until needed. The sheets of metal are composed of some composite which has a remarkable affinity for heat, without melting. This composition has not been made public, but is supposed to be a fusion of iridium and platinum. For covering and separating the metal receivers fine silk, saturated with a preparation of liquid oxygen, is used, and this is said to entirely close all possible escape of any degree of heat. The receivers are then packed in a box, as many and as close as desired, and the box set to one side ready for use. To secure the original supply of heat, M. Carrière makes use of the natural heat force of the sun, concentrating it by means of polished mirrors to a focus on the plate-receivers, placed upon saturated silk protectors, which prevent any of the heat from escaping below during the receiving process. As soon as the desired degree of heat has been attained, a counter saturated cover is folded over the plate, and the latter placed in the box receptacle. It will be seen that the process is easy and inexpensive, while, if the inventor can do all he claims—and his story is partially borne out by the testimony of others—it is evident that a new source of power has been developed which is of equal value with that of electricity, and which possesses the great advantage of being practically inexhaustible.—*North American Manufacturer*.

A STUDY OF CHILDREN'S TEETH.—For two or three years Dr. Samuel Sexton has been engaged in an investigation of the teeth of school children, with special reference to the influence of decayed teeth upon the sight and hearing of children so afflicted. The investigation was suggested by the almost constant occurrence of defective teeth in cases of inflammatory diseases of the eye and ear.

In the course of his work, the *Times* states, Dr. Sexton has taken some hundreds of accurate casts in plaster of the interior of the mouth in cases that have come under his notice, and has collected a cabinet that is invaluable as a contribution to science. His method has been, first, to take a complete cast of the internal cavity, and then from it to mold each jaw separately, and unite the two posteriorly with a neat brass hinge, so that the state of the teeth, their arrangement, and all their peculiarities can be observed at a glance. He has found a pretty constant association between myopia, impaired hearing, and defective teeth, the cause of which he believes to lie in the distribution of the fifth pair of nerves, which is at once a sensory, motor, and trophic pair, supplying the teeth, the tissues of the nose, those of the eye and ear, the integuments of the frontal and temporal region, and so on. Irritation of the whole region is consequently produced by a defective tooth, and, in point of fact, some of the severest cases of neuralgia, temporal, facial, and ophthalmic, arise from impaired teeth; often in cases where the teeth themselves give no trouble whatever, and none save the acutest medical intelligence can trace any relation between the fierce attacks in the eye, ear, or temple, perhaps, and the caried tooth that gives no local trouble whatever. In a few cases progressive dementia has been arrested by immediate repair of a tooth that produced no apparent disturbance, but was responsible for deep-seated cerebral trouble; but these cases have been too few to lay stress upon them as factors in the investigation. On the other hand, troubles with the eye and ear are often traceable to defective teeth, and Dr. Sexton regards irritation of the maxillary limbs of the fifth pair as among the principal causes of the progressive near-sightedness of school children, as observed by Drs. Agnew, Loring, Parke Lewis, Kohn, and other ophthalmologists.

COUNTY INSTITUTES.

CALAVERAS COUNTY.

THE annual Institute of the teachers of this county was convened at San Andreas by Supt. T. G. Peachey on Tuesday, September 21st. The session of three days was well attended, not only by the teachers of the county, but by many citizens as well. State Supt. Campbell, and Mr. Lyser of the JOURNAL, were present, the former delivering two evening lectures, the latter as instructor.

On the motion of J. G. Dunn, E. F. Floyd was unanimously elected Vice-President.

On motion of E. M. Price, C. A. McCourt was elected Secretary, and Miss J. G. Bund was elected Assistant Secretary.

Mr. Lyser took up on the several days of the Institute the subjects of Arithmetic, Examinations, History, Language, Geography, and a Uniform Graduating System for District Schools. The exercises were participated in and remarks made by E. F. Floyd, T. G. Peachey, H. F. Terry, E. M. Price, J. G. Dunn, N. C. Hanscom, C. A. McCourt, Mrs. H. A. Morgan, Miss Eunice Gallagher, Miss M. G. Salcido, and Miss J. G. Bund.

The whole Institute, as well as those teachers named, manifested an active, enthusiastic interest in all the proceedings, and there was a general expression of decided benefit received at this session.

Many of the teachers present have been engaged in this county for a number of years. Supt. T. G. Peachy is also principal at Angel's Camp. He has performed the duties of his office in a manner thoroughly efficient and with most conscientious care. Ever since his advent into office he has been engaged in litigation in regard to his salary, which, by a special law, is fixed at the pittance of \$400 a year. His board of supervisors, very narrowly pleading this law as against a general enactment on the same subject, have refused to take any action under the latter, and raise his salary to any decent figure. The case is now before the Supreme Court, and will be decided some time in November. We trust, for the sake of the educational interests of Calaveras, that Supt. Peachey will win, and that his efforts in behalf of the superintendency and of educational progress will obtain due recognition.

Among the teachers of this county prominent by reason of long experience and success, we must name Mr. E. F. Floyd. This gentleman, a Maine man, has occupied his present position, the principalship of the Murphy's school, for nine years. He is a good scholar and a very able teacher.

The editor of the JOURNAL was much pleased to meet one of its warmest friends, in the person of ex-Supt. C. R. Beal, now editor and proprietor of the *Calaveras Citizen*, the chief county paper. Mr. Beal, though he has left teaching, keeps up all his former interest, and is president of the County Board of Education.

Among the teachers who have more recently come into the county, we must name Mr. E. M. Price of Railroad, and Mrs. H. A. Morgan of Big Trees.

Mr. Lyser's stay in Calaveras was made very pleasant by the hospitality of the people, and the evident interest taken by all in the exercises of the Institute.

SAN BENITO COUNTY.

Institute met at Hollister public school-house, County Superintendent of Schools J. N. Thompson, presiding. The exercises opened with a prayer by Rev. J. E. Wickes, followed with a song by the Institute. A. Martin was chosen Vice-President; George Varcoe, Secretary; and Miss L. L. Moore, Assistant Secretary. After another song by the Institute, Prof. Knowlton was introduced, and made a few well-timed and appreciated remarks on The First Day of School. An adjournment was then taken until two o'clock. In the afternoon, the Institute opened with a song, followed by an address by

Prof. Knowlton on The Quincy System of Teaching. Then came another song, a reading by Prof. Knowlton, singing by the teachers, reading exercises by the members of the Institute, then adjournment until Thursday.

On Thursday the Institute met at 9 A. M., Supt. Thompson presiding. After prayer by Rev. J. E. Wickes, and singing by the Institute, the subject of Primary Arithmetic according to the Grube Method was taken up and discussed by Prof. Knowlton, Miss Fannie Lechtenberg, and others. A recess was then taken, followed by a general discussion of the subject, Local Geography. Next came a short drill in articulation by the class, conducted by Prof. Knowlton. In the afternoon, Prof. Knowlton gave a short lecture on the subject, How to Study; after which Oral and Written Composition and Sentence Making was discussed by the Institute, followed by some remarks on Corporal Punishment by Prof. Knowlton. After a short recess, Kindergarten Work was taken up and reviewed by Miss Lechtenberg and others, followed by some select readings by Prof. Knowlton.

On Friday the programme was as follows: Prayer by Rev. Wickes; Mental Arithmetic by Prof. Leggett and others; Elementary Logic, Model Analyses, History, Business Arithmetic, Mensuration, Interest, Discount, Metric System, Physical Geography, Rains, Winds, Ocean Currents, Climate, Natural Philosophy, Chemistry with experiments, Reports of Committees; closing remarks by Supt. Thompson. Lecture at the Christian Church in the evening by Hon. F. M. Campbell, State Superintendent of Schools.

SAN MATEO COUNTY.

One of the pleasantest and most valuable Institutes ever held in this county was called to order at Redwood City by Supt. G. P. Hartley, on September 15th. There was a full attendance of the teachers of the county, also a number of school trustees, and some other visitors.

Prin. Chas. H. Allen, of the Normal, attended as instructor. In his usual inimitable and happy manner, he took up and illustrated the best methods of teaching the various branches of the common school course. Prof. Allen's talks before Institutes always have a definite end in view, *i. e.*, to show clearly right ways and wrong ways of teaching. In the evening Prof. Allen lectured on Reading.

On the second day of the Institute, Prof. Allen opened on the Grube System. W. B. Turner read a well-written paper, containing many valuable hints and suggestions to teachers, on Educational Groove-Runners. Hon. F. M. Campbell, State Superintendent, was then introduced, and explained the graduating and diploma system for public schools. After a brief recess, Misses Cullen and Hauss favored the Institute with a piano duet. The teaching of History was taken up by Prof. Allen, and aroused much interest.

It having been announced in the morning that Hon. F. M. Campbell, Superintendent of Public Instruction, would address the Institute in the afternoon, a large number of citizens were present, who, with over fifty teachers, filled the room. Mr. Campbell read an able and instructive paper, which was listened to with a great deal of interest and pleasure. After recess, a select reading (Our Folks) by Mrs. Bartholomew was well received. Mr. W. G. Thompson then read a paper on Mistakes in Teaching. The Ride of Jennie M'Neil, a select reading by Miss Blanche Bean, was well rendered. Mr. H. C. Hall read a paper on The Teacher's Vocation.

In the evening the Institute convened at Germania Hall to listen to Supt. Campbell in his lecture on Some of the Chief Hindrances to a Satisfactory Education. The hall was well filled, and the lecture was pronounced by many to be one of Mr. Campbell's best efforts. During the evening, Misses Robinson and Leahy sang a song each, with good effect.

On Friday the Institute convened at nine o'clock, Pres. Hartley in the chair.

After the minutes of the previous day were read and approved, the question box was opened, and several of the topics therein suggested became the subject of discussion. By request, Mr. Turner spoke on the teaching of music and drawing. He was followed by

State Supt. Campbell, who spoke briefly on the practical aspects of drawing, and then bade the Institute adieu. The question "Are monthly examinations profitable?" elicited a discussion which was participated in by Messrs. Hartley, Thompson, Kraft, Hall, and Turner. The discussion also merged into another question on the efficacy of the credit and reward system, which disclosed many good ideas. The subject of School Discipline was treated by Mr. Kraft with force and clearness. After a song by Mr. Turner, Mr. Kraft took up the subject of Grammar, and illustrated on the blackboard. Mr. Kraft was followed by a very interesting and practical dissertation on Penmanship by Prof. Horton, freely illustrated and interspersed with useful hints.

After passing a number of resolutions, the Institute adjourned.

SONOMA COUNTY.

Sonoma is a county first class in every respect. It has more school districts than any other county in the State; is third in the number of school children and teachers; produces more grapes and wine than any other county; and has a tip-top superintendent. It was therefore to be expected, that the Institute continuing during the week commencing Monday, September 12th, would prove both elaborate and highly interesting. And so it was.

On opening the Institute, County Supt. C. S. Smyth presiding, Rev. R. G. Jones offered a prayer, and Prof. E. S. Lippitt delivered a very eloquent and well-timed address of welcome. The roll was then called, and 139 teachers responded thereto. The Institute then proceeded to the election of vice-presidents. Vice-Presidents—Prof. A. G. Burnett, C. L. Ennis, C. E. Hutton, M. Dozier, H. E. Footman, and E. W. Wilbur.

Supt. Smyth then delivered the annual address, which was both entertaining and instructive. The assembled teachers then sang America, after which the Institute adjourned to meet in the afternoon at the Brick school-house to take up section work.

At 1:30 P. M. the Institute met at the Brick school-house, and proceeded with the regular order of section work. M. Dozier took up the subject of Grammar, and handled it in an intelligent and able manner. Arithmetic was a theme upon which Prof. A. G. Burnett proved himself perfectly at home. M. E. C. Munday devoted the time allotted to him in an able dissertation on Composition. E. T. Crane and C. E. Hutton in a very able manner handled the dual subjects of Geography and Constitution.

In the evening the Institute met at the M. E. Church to hear the lecture of Prof. C. H. Allen, principal of the State Normal School, who was present during the greater portion of the sessions of this Institute, and aided the teachers by his addresses. Prof. Allen delivered an able address on How to Save Wastage of Time. His address was well received by a large and appreciative audience. The evening exercises concluded with a vocal duet, well rendered by Mrs. J. P. Rodgers and Dr. Perkins.

Tuesday forenoon was devoted to the usual section work, under the supervision of Messrs. Dozier, Burnett, Crane, Munday, and Hutton, at the Brick school-house.

The afternoon session at the M. E. Church was opened with instrumental music by Lulu Hopkins and Teresa Newburgh. E. W. Wilbur then addressed the Institute upon the subject of History, handling the subject in an able manner. Prof. Allen, M. Dozier, and G. W. Jones joined in discussion of the subject presented by Mr. Wilbur. M. E. C. Munday addressed the Institute on the subject of Word Analysis, and Messrs. Dozier and Jones made remarks on the same subject.

In the evening the teachers of the Institute joined in a grand reunion at the Petaluma Theater, under the auspices of the Petaluma Social Club.

On Wednesday, the forenoon was devoted, as usual, to section work. The afternoon session, at the M. E. Church, was inaugurated with an instrumental duet by Prof. Army and Mrs. Hawes. Prof. Allen addressed the Institute on the subject of Course of Study and Gradation in Grammar Department. Messrs. Campbell, Davis, and Jones spoke in continuation of the same subject. A recess was had, after which Prof. Allen again, in a

very able and instructive manner, addressed the Institute, taking as his theme the rangey subjects, Heat, Evaporation, Morals, and Manners.

In the evening, the church was well filled to listen to a lecture by F. M. Campbell, State Superintendent of Public Instruction. The first exercise was a song by the High School chorus. Supt. Campbell then delivered a thoughtful and carefully prepared address upon the subject of High School Education.

Thursday forenoon was devoted to the usual section work at the Brick school-house, all the teachers present evincing a lively interest, and participating in the discussion of the subjects under consideration.

At the M. E. Church in the afternoon, the meeting was of unusual interest. M. E. C. Munday delivered an able address on The Course of Study. After a brief recess, the Institute was addressed by State Supt. Campbell, who took up the same line of thought outlined by Mr. Munday.

In the evening, the church was filled to compactness to listen to a lecture by Supt. Campbell. The lecture was preceded by a well-rendered duet by Mesdames Tyler and Zartman, also a pleasing solo by Mrs. J. P. Rogers. The lecture of Mr. Campbell was an able effort in behalf of thorough and general education.

On Friday, the first section of the forenoon was devoted to the subject of Drawing, in which Prof. C. E. Hutton led off, and others participated. After a recess, general discussion was in order, and all who felt so inclined participated. The rest of the day was devoted to general discussions, and to the usual business winding up. The general sentiment in regard to the Institute seemed to be that expressed by the *Petaluma Argus*: "Throughout, the proceedings of the Institute have been characterized by good order and dignity of deportment, and the teachers will doubtless hold in pleasant remembrance their reunion in this city."

SANTA BARBARA COUNTY.

This county, on account of the unrivaled salubrity of its climate, has drawn within its limits a larger proportion of intelligent population than almost any other locality in this State. The fact is evident in the character of its schools and their teachers. It is no flattery to designate the latter as in the highest rank of our educators, noticeable for general culture and special training for educational work. During the recent visit of the editor of the JOURNAL to Santa Barbara, he found more university-trained men and *women*, more Normal School graduates, than in any other region of this State, with the possible exception of a few specially favored localities near the metropolis. We have no hesitancy in saying, from all we heard and from what we saw of their teachers, that the schools of Santa Barbara City, under the superintendency of Prof. T. N. Snow, are not surpassed by any on the coast. And the same may well be said of the county schools under the supervision of Supt. G. E. Thurmond.

This gentleman, by his thorough efficiency as an educator, his good-natured yet firm manner, has secured a unity of work and a harmony of feeling in his county that really make Santa Barbara a fair educational model, as well as quite an earthly paradise.

The Institute for 1881 was held at Lompoc September 27th, 28th, 29th. The little town was crowded far beyond its ordinary capacity by the sixty teachers who comprise Santa Barbara's usual corps of instructors. The citizens, however, by their warm-hearted hospitality, and the energy of Mr. Lansdell, clerk of the Lompoc board of trustees, supplied all omissions and shortcomings.

Among so many teachers of high scholastic acquirements and excellent success in actual class-room teaching, it might seem invidious to single out a few, where so many are equally worthy. These few are, however, but a type of what constitutes the majority of the teachers of this county.

Mr. F. E. Kellogg of Goleta, a thorough scholar, and a teacher whose presence and bearing are magnetic, took active part in the exercises of the Institute. So likewise did Messrs. T. W. Conrad and Lorenzo Jared, both members of the county board of education.

Mr. Conrad is principal of the Montecito school, one of the best taught in the county. Mr. Jared is not teaching at present. He is a naturalist of ability and learning; but, withal, even more than usually modest. He is one of the favored few in the profession who are of independent means, and his interest in education is noteworthy and creditable.

Mr. J. W. Stringfield was a few years ago one of the best teachers in San Luis Obispo County. He is now principal at Guadalupe, and Santa Barbara gains what San Luis loses—a first-class teacher.

But in the character of its female teachers this county is specially strong. Miss S. A. Winchester of Santa Barbara is from Maine; an acquisition to any department. We wish we were autocrat of San Francisco for just thirty minutes—we would have her here right away. We wonder if there are any good teachers left in Maine. She has sent us a good many down this way. Then Miss Dorcas Wheelock, principal of the Carpenteria school; Miss Lucy Shephard (graduate of Iowa University) of Santa Barbara High School; Miss Ida Twitchell (also from Iowa University) in La Graciosa district; Miss E. F. Edmondson of Laguna; Miss Ella Harrison of Santa Barbara—all struck us as teachers of exceptional merit, both educationally and professionally.

The proceedings of the Institute were marked by deep interest and earnest enthusiasm. The work of the instructor in the various branches of the school course appeared to be very acceptable. In closing a very full account of the proceedings, the *Santa Barbara Press* says on this point:

“The present session of the Institute has been very pleasant and profitable. Prof. A. Lyser is a practical teacher, and the work done by him during the session of the Institute has been highly satisfactory to all the teachers. They will go to their respective schools with renewed courage, ready and willing to put in practice the new methods that have been advanced.”

A brief outline of the programme is as follows:

The Teachers' Institute at Lompoc was called to order September 27th, County Supt. George E. Thurmond in the chair. A song entitled Spring was given by the choir, consisting of Mrs. Raymond, Misses L. Everett, Edmondson, Stone, Messrs. Cook, Kellogg, and J. W. Stringfield; Miss Phebe Owen, organist. This was followed by a prayer by B. G. Whittemore.

Nominations for Vice-President resulted in the selection of Mr. Kellogg of Goleta. Miss Gertie Hall of Carpenteria was elected Secretary, and Miss Mary Hails, Assistant Secretary. Next came an essay and class exercise in phonetics by Miss S. A. Winchester. The essay was complete and comprehensive, and covered a subject difficult to handle on account of variety of methods of teaching, and the very common habit of mispronouncing the simplest words.

The afternoon session opened with singing by the choir, Better Late than Never; followed by Penmanship, introduced by D. N. Kelsey, in which he gave the result of his experience in teaching writing in primary schools, and advocating the use of charts. Previous to a continuation of the subject by J. W. Stringfield, Miss Mary Hails read a most excellent essay entitled, Language, or the Quincy Method. Mr. J. W. Stringfield continued the subject by a practical illustration of his method in connection with both reading and arithmetic, by a class drill. Miss Dorcas Wheelock followed with Primary Arithmetic, in a class exercise.

On Wednesday, the Institute was called to order at 9 A. M., Supt. Thurmond in the chair. Singing by the choir, Hearts and Homes. Prayer by Rev. F. E. Kellogg. Next followed an essay on School Government by Mr. A. Eells. Prof. Lyser then conducted a class in the Grube Method of Teaching Primary Arithmetic, assisted by Mr. Eells. Prof. Lyser was followed by Mr. Curryer with his method of teaching cancellation, and so shortening operations even in interest. Next came an essay, Public Schools, by Mrs. Goodrich—an able effort and well received.

The afternoon exercises opened with My Fairy Ship, by Messrs. Cook, Stringfield, and

Misses Stone and Everett, which was rendered in their peculiarly charming manner. Next followed an essay by Rev. Whittemore, entitled, Thoughts on Our Work, its importance, aims, purposes, and results. This was followed by a most excellent class exercise in Drawing by Miss Ella Harrison. She commenced by cultivating the eye by drawing lines, and then comparing them with the ruler measurement. Then followed an essay, The Ideal School by Miss Crenshaw. She advocated the adornment of school rooms and grounds. It was full of excellent ideas. Next in order came Mr. Kellogg on Reading and Elocution. He gave his plan for teaching reading, and illustrated with some excellent exercises.

On Thursday morning, the Institute opened with singing by the choir of The Gushing Rill, in a very superior manner, followed by a prayer by Rev. A. M. Fields, pastor of the M. E. Church, Lompoc. A superior essay on the Study of Natural History was read by Miss Ida Twitchell. The programme was then varied a little, and a class in Primary Reading was conducted by Miss Woods. By request, Mr. Conrad then led a class exercise in the Fourth Reader. His plan is to combine the reading lesson with drawing out all the ideas in connection with it. This was followed by a most delightful essay by Miss Emma Edmondson, The Profession of Teaching. Mr. Whittemore introduced the subject of Geography. This was followed by an essay by Mr. Saunders, principal of Lompoc High School, upon School Government. It was most excellent, and full of modern ideas.

On Thursday morning, Miss Lucy Shephard spoke in a happy and pointed manner on School Government. Lorenzo Jared, one of the board of education, spoke on the Proper Use of the School Library.

Mr. Lyser occupied the greater portion of Thursday afternoon by remarks on The School Library—How to Use It, History, Are Our Schools Godless? etc.

The session closed with the report of the Committee on Resolutions, as follows:

I. *Resolved*, That the thanks of this Institute be tendered to Mr. A. Lansdell for the interest he has taken in securing suitable accommodations for the members of this Institute.

II. *Resolved*, That we hereby express our appreciation for the kind and hospitable manner in which the good people of Lompoc have entertained the members of this Institute.

III. *Resolved*, That a vote of thanks be tendered Prof. Albert Lyser for his able and interesting lectures, and for his valuable instructions during the present session of this Institute.

IV. *Resolved*, That it is the opinion of this Institute that the teachers of Santa Barbara County should adhere as closely as possible to the course of instruction indicated in the text-books.

EDUCATIONAL INTELLIGENCE.

SAN FRANCISCO COUNTY.

By order of the superintendent, the teachers of this department have been divided into four sections for institute purposes. Section A comprises principals and high schools assistants; B includes teachers of first, second, and third grade classes in grammar schools; C is composed of fourth, fifth, sixth, and seventh grade teachers; and D of those in eighth grades.

It is designed to hold four meetings of each section a year. Methods and other germane subjects will constitute the programme for each session.

Section A has had one meeting. A paper on The System of Written Examinations was read by Prin. Brooks, Franklin Grammar School. He strongly condemned the present system.

On motion of Prin. Herbst, South Cosmopolitan Grammar, it was resolved to

recommend to the board the abolition of all written examinations for promotion, except in the fifth and first grades.

Mrs. Hathaway of the Mission Grammar having resigned the vice-principalship of that school, the board filled the vacancy by promoting Miss Randolph of the Lincoln Grammar. Miss Randolph is one of our most successful teachers, and this promotion was well deserved.

Mr. Gerhard Schoof and Mr. I. Leszynsky, teachers of drawing and book-keeping respectively, have been reinstated in their positions in the department. There is now one special teacher each for drawing, music, and book-keeping.

Messrs. J. C. S. Stubbs, E. J. Bowen, and Dr. DeWitt, who were elected to fill vacancies in the board of education, have taken their places.

At the recent election for municipal officers, the Republican ticket for school directors was elected in its entirety. Among the new members are Dr. Fiske and J. S. Bacon, members of a former board.

ALAMEDA COUNTY.

All of the schools in the county are now in session, and are advancing prosperously along the educational road.

Livermore school is specially fortunate in having first-class teachers from principal down.

The number of male teachers employed in the county is 48, female teachers, 195; total, 243.

The Brodt investigation is causing considerable discussion concerning corporal punishment in our public schools, and a universal condemnation of punishments inflicted on the head.

Oakland has started a class to pursue what is termed a Commercial and Business Course, covering a period of one year. At first, as an experiment, it will be located in the Tompkins school building.

Of the recent county apportionments of State funds, Oakland receives \$14,620.20.

The new method of county apportionments will favor cities and towns, where there is always a larger average daily attendance in proportion to the number of census children than in the country districts.

The Institute of this county, which met a few days since at Oakland, was, as might be expected, eminently a success both as regards the interest manifested by teachers and the educational value of the exercises. A full report is promised for our next issue.

An attempt at "hazing" a few days ago in the State University clearly demonstrated that that institution is very thoroughly in hand. The whole matter was quite nipped in the bud, and those concerned held severely accountable. There were a number of suspensions—two or three, we believe, permanent.

The conviction is growing stronger among intelligent people, that the Regents have provided for the University a vigorous administration, and that never before have the prospects of that institution for a great and useful career been so encouraging.

The literary exercises, which in Oakland are held in mid-term, were this time usually made Garfield memorial exercises. In Prin. McChesney's school—the Oakland high school—the Friday following Pres. Garfield's death, the exercises were especially impressive and interesting.

Two Oakland teachers—and among her best—Misses E. H. Hilton and May B. Treat, have resigned, in order to spend a year in Europe. They made the voyage from Philadelphia to Antwerp in a vessel sailed by Miss Hilton's brother, and then "do Europe" alone. Miss Treat has an interesting letter in the San Francisco *Evening Bulletin*, for which she is evidently to act as a special correspondent.

We learn that the Berkeley high school, since Prof. W. W. Anderson has assumed charge, has greatly increased in numbers—doubled, so it is said. This is precisely the result we anticipated, and there is no doubt but that, before the end of the year, Berkeley will boast one of the best preparatory schools on the coast.

SOLANO COUNTY.

The report of the proceedings of the Institute of this county comes to hand too late for this month's issue. From all accounts, the sessions were fruitful of good results, and reflect great credit on Supt. Sutphen's ability and energy.

LOS ANGELES COUNTY.

As a number of districts in this State have had an experience similar to the following, we publish a full account of the same. It will be seen that the board, acting in a judicial capacity, *acquitted Mr. Burrett, and then warned him not to do so again.* No reflection is here intended on Supts. Hinton and Guinn, who from the first favored a fair trial and a verdict in accordance with the evidence. [Editor JOURNAL.

Special meeting of the County Board of Education.

The board met in the Los Angeles Club-room at 7 P. M. Present, full board.

The minutes of the previous meeting were read, corrected, and approved.

The President stated that the object of the meeting was to hear the charges of unprofessional conduct preferred against Mr. D. N. Burrett by Mr. W. T. Martin.

Mr. P. C. Tonner appeared for the defendant, and Mr. Will D. Gould for the plaintiff.

The charges were then read, to which Mr. Tonner responded by entering the plea of "not guilty."

Considerable discussion ensued with regard to the right of the board to act upon the charges.

On motion of Mr. Hinton, the board proceeded to take evidence in the matter.

Mr. Gould stated that he expected to prove that Mr. Burrett had, for a long time past, been a party to a systematic fraud, whereby a portion of the funds of Palomares school district has been used for other purposes than those specified by law; that consequently Mr. Burrett was guilty of immorality and unfitness for teaching, and asked that Burrett's certificate be revoked.

Mr. Tonner objected to the hearing of any evidence in relation to any so-called "fraudulent orders" alleged to have been presented by Mr. Burrett to the county superintendent in June last.

Mr. Guinn moved that the objection be overruled. Carried.

Mr. Hinton stated that about the 18th of June, 1881, Mr. Burrett presented an order for \$224.50, drawn in his favor for services rendered as teacher; that he, believing the order to be fraudulent, drew from Burrett the admission that only \$29.50 was due the

latter, and that the balance of the money was to be paid over to the trustees or other parties.

Mr. W. T. Martin, being duly sworn, stated that he had been elected trustee in June last, and that he found, by examining the trustees' books, that in the early part of the school year, 1879-80, the board had agreed to give Mr. Burrett \$80 per month for the school year, but that towards the close of the year said board had rescinded its former action, and allowed Mr. Burrett \$100 per month for the entire year. He further stated that to the best of his knowledge and belief, Burrett had not received the extra \$20 per month for his own personal benefit, but that it had been used for an unlawful purpose; that Mr. Tonner had proclaimed on the public streets in Pomona that he was a "broker" for Mr. Burrett, and that Burrett was paying him \$20 per month, and that he (Tonner) had turned it over to the trustees.

The clerk's book also shows that the sum of \$220 was paid to the district, by P. C. Tonner, and that the sum had been used in liquidating the indebtedness of the district.

Mr. P. C. Tonner was sworn. He stated that sometime during the school year 1879-80, the board of Palomares District had contracted with Mr. Burrett to give him \$100 per month, thereby rescinding a former contract to give him only \$80, and that the orders drawn in consequence of said agreement had been honored by the county superintendent.

Mr. Tonner then went on to state that he had always argued that the salary of the teacher in that district should not be less than \$100 per month, and that when he quit teaching in the district, he was receiving \$170 per month.

Mr. W. T. Martin asked the witness how much of the \$170 per month did he pay out for an assistant teacher.

To which the witness very promptly replied, "None of your business, sir."

Mr. D. N. Burrett, on being sworn, made substantially the same statement as had been previously made by the first witness.

Mr. Martin continued by asking Mr. Burrett if he did not know, that, while receiving the \$100 per month, he was entitled to but \$80.

Objected to by Mr. Tonner.

Mr. Gould spoke at some length, asking that the board place itself on record as being emphatically and unrelentingly opposed to any such fraudulent attempts to abstract the funds of the school district.

Mr. Tonner asked that the charges be dismissed.

On motion, the board went into a committee of the whole to consider the charges.

After considering the matter for some time no definite action was taken, and the board adjourned to meet in the morning at 8½ o'clock.

Board met pursuant to adjournment. Present, full board.

The committee of the whole reported through its chairman the following resolutions, which were unanimously adopted.

Whereas, We consider the conduct of D. N. Burrett, a teacher of the Palomares District, charged with an attempt to assist certain parties in said district in drawing money from the State School Fund for other purposes than teachers' salary, to be extremely reprehensible, yet, owing to extenuating circumstances which shield him from the full penalty of his offense, viz., the revocation of his certificate; and whereas, we believe such conduct is deserving of severe censure,

Therefore, be it *resolved*, that the President of our board reprimand Mr. D. N. Burrett in the presence of the board; and whereas, it is the duty of this board to guard the school interests of this county to the best of its ability; therefore, be it *resolved*, that the conduct of a teacher who lends his aid to the appropriation of the school funds to any other than the purposes prescribed by law, is highly reprehensible and unprofessional, and that the certificate of a teacher found guilty of such an act will be revoked by the board.

Mr. D. N. Burrett was then called in, and the reprimand administered in accordance with the resolution.

The board then adjourned, subject to the call of the President.

The board is composed of Dr. Joseph Kurtz, President, Mr. J. M. Guinn, Mr. W. P. McDonald, T. A. Saxon, J. W. Hinton, Secretary.

BUTTE COUNTY.

The Chico school re-opened September 12th, with H. T. Batchelder, principal.

Assistants. — Benjamin Foss, Russel Dunn, Mrs. Sproul, Mrs. Ed. Warren, Misses Emma Perry, Kate Conger, Mary Cushman, and Jennie Whitesides.

The Oroville school will open Oct. 4th, with F. A. Peachy, principal; assistants, Mr. J. F. Halloran, Misses Nellie Givens, Carrie Sexton, and Delia Leggett.

D. W. Braddock and Fred Hackett have the Gridley school engaged for this winter.

Miss Maggie Buckley is to teach in the Union District, Miss Jennie Greenwell at Moore's Station, Miss Smith of Plumas County at Bidwell's Bar, Miss Blanch Lyon at Boston Ranch in the Hurleton District, Mrs. M. E. Bell in the Wyman's Ravine District, Miss Orilla Jenkins at Thompson's Flat, Miss Kate Reihl at Morris Ravine, Mr. N. M. Davis at Cottonwood, Miss Josie Douglas at White Wash Trees, Ed. Price in the Stoneman District, Miss Rachel Young at West Liberty, Miss Mary Lynch at Willows, Miss Maggie Lynch at Nimshew, Miss Mary Ward at Rio Seco, Miss Emma McGregor at Centerville, Miss Clara Clindinin at Lone Tree, Professor Oman, Miss Louise Hibbard, and Miss Calhoun at Biggs, O. E. Swain, Misses Annie McGregor and Magnolia Wood at Cherokee, Miss May Travis at Clipper Mill.

Miss Kate Leggett is teaching at Mooretown, Miss Mary Evans at Enterprise, Miss Kate Bendle at Mt. House, and Miss Jessamine Wood at Concow.

SANTA CLARA COUNTY.

There have been quite a number of changes in the schools of this county recently. Miss L. M. Washburn of the State Normal has taken a year's leave of absence for her health. She needed rest, for a more indefatigable, earnest, conscientious teacher does not exist. She has gone East for the year.

Mr. J. F. Klenk, mathematics teacher of San Jose high school, is superintendent of the Salinas City schools.

G. E. Lighthall, formerly in San Jose, is principal of the New Almaden schools—an excellent position.

Mr. T. W. Whitehurst, whom we remember as having been one of the best teachers in the county fourteen years ago, still holds his place at the head. Mr. Whitehurst is now principal of the Los Gatos school—an excellent position—and a member of the county board of education.

Mr. James G. Kennedy, principal of the San Jose high school, his position for five

years past, continues as strong and popular as ever. Mr. Kennedy is spoken of in connection with the State superintendency on the Democratic ticket.

Though Prof. A. W. Oliver has superintended the San Jose schools but a few months, the people of that city already feel the wisdom of their choice. Progress is evident in every direction.

BOOK NOTICES.

HOLMES LEAFLET. By Miss J. E. Hodgdon. Boston: Houghton, Mifflin & Co. San Francisco: A. L. Bancroft & Co. Price 50 cents.

Our description of the Longfellow Leaflets in the Journal will apply to these the second set of the series. The design is excellent, and teachers of Fourth and Fifth Reader classes, as well as those who have classes in English literature, will find these Leaflets of the highest service. They will greatly facilitate an acquaintance with the gems of our literature.

LIPPINCOTT'S POPULAR SERIES OF READERS. By Marcius Wilson. San Francisco: Joseph A. Hoffman, 210 Montgomery street.

This series of readers contains so many new and startling points that the review in our October number did them but scant justice. Indeed, there is but one way for the teacher to obtain an adequate idea of one of the most meritorious series of reading books yet placed before our educational public; and this is to give them a thorough personal examination. The reading-books prepared by Marcius Wilson have always been greatly liked by California teachers. They will find this series well worthy their favorite author; in fact, excelling his former efforts. Mr. Wilson is far ahead of some American school-book authors in realizing that the reading-book should be a medium for teaching something besides the articulation and pronunciation of words. As a vehicle for the conveyance of useful knowledge, it is the best, often the only, medium. We hope our progressive superintendents

and teachers will get a set of books as aids, if nothing more at present, they will thus prove valuable.

GARFIELD'S WORDS. Compiled by William Ralston Balch. Boston: Houghton, Mifflin & Co. San Francisco: A. L. Bancroft & Co. 184 pp. Price \$1.

On the cover of this book is the prophetic sentence spoken by President Garfield in the House of Representatives Dec. 9th, 1868: "A noble life crowned with heroic death, rises above and outlives the pride and pomp and glory of the mightiest empire of the earth."

It is with many such thoughts, expressed in such language, that this book is filled. Following a short memoir, are brief paragraphs on Garfield's Creed; Here and There; Great Characters; Success in Life; Education; History; Law and Order; The Nation; Finance and the Public Credit; War, etc., etc. Many choice ideas are here which our teachers should know and our youth should remember. This book is certainly eminently worthy of a front place, in clear view, on the shelves of the school library and in every true teacher's private collection.

ELEMENTS OF QUATERNIONS. By A. S. Hardy, Ph. D., Professor of Mathematics, Dartmouth College.

The author of the above treatise has been eminently successful in exhibiting in his work the elementary principles and notation of the quaternion calculus in such a manner as to be most easily apprehended by beginners in the class-room. His treat-

ment of the subject is as concise as conditions will permit, it being at the same time sufficiently full for the purpose of elementary instruction. He avoids the too great conciseness of Tait, as well as the too great diffuseness of style which characterizes the elements and lectures of Sir William Rowan Hamilton. While displaying a marked originality of style and method, he at the same time makes a judicious selection of methods, examples, and exercises from a great variety of sources, including the authors above mentioned, as also Laisant, Houel, and Argand Odstreil; and thus illustrates in an admirable manner the simplicity and brevity of the quaternion method. The three chapters, occupying 230 pages, treat respectively of addition and subtraction of vectors, or geometric addition and subtraction; multiplication and division of vectors, or geometric multiplication and division; and applications to Loci.

It is superfluous to state that the typographical excellence and the general appearance of the book is unsurpassed, for it is published by Ginn, Heath & Co.

BRIEF BUT COMPLETE HISTORY OF ENGLAND, FRANCE, AND GERMANY; giving the contemporaneous sovereigns, literary characters, and social progress of each century, from the Roman Conquest to the present day. By Mary E. Kelly, an experienced and practical teacher. One volume, quarto, bound in cloth, price \$1.50. Sent by mail, postage pre-paid, on receipt of price. Single copies furnished to Teachers, with a view to introduction, at \$1.00 per copy. E. Claxton & Co., Publishers, No. 930 Market Street, Philadelphia.

The design of this book is completely set forth in the above title. Of course, such works do not give us real history. But as chronology, or skeleton history, it will be found useful.

AN ELEMENTARY TREATISE ON MENSURATION. By George Bruce Halsted, A. B., A. M., and ex-Fellow of Princeton College; Ph. D., and ex-Fellow of Johns Hopkins University; Instructor in Post Graduate Mathematics, Princeton College. Boston: Ginn & Heath. 1881. Pages 243.

This is undoubtedly the best treatise on mensuration published in this country. The treatment of the subject is new and logical.

The author is the first who, to our knowledge, understands the place of mensuration in a general scheme of mathematics. While his treatment is exhaustive, his style is so simple and the illustrations so ample and clear, that the subject presents new and unexpected charms. The book is well worth examination and adoption.

SADLER'S COUNTING-HOUSE ARITHMETIC; a New and Improved Work on Business Calculations. With Valuable Reference Tables. Designed for Bankers, Brokers, Merchants, Business Men, Accountants, Farmers, Mechanics, Teachers, and Students, and Specially arranged and adapted as a Practical Text-Book for Business Colleges, High Schools, Academies, and Universities. By W. H. Sadler, Associate Author of Orton and Sadler's Business Calculator, President, Founder, and Proprietor of Sadler's Bryant and Stratton Business College, Baltimore; and A. J. Nugent, Practical Accountant, Baltimore, Md. Published by W. H. Sadler. 1881. Pages 510.

This is the largest arithmetic we have ever seen, and while out of place in the common school, would be of excellent service to teachers, as well as in business schools and colleges. It is a complete reference-book for the counting-room, and where an authority on arithmetical questions is required. Many features of excellence can be pointed out, among which are, the clearness of the definitions and rules of the various subjects; the systematic arrangement of the subjects; the introduction and special treatment of trade discounts and marking goods; the number of ingenious and original labor-saving tables throughout the work; the great number of examples to each subject, and the practical nature of such examples.

BOOKS RECEIVED.

The following books have been received, and will be reviewed in as early an issue as possible. In the mean time, we give titles in full, and also prices, where the latter have been furnished us. Publishers will find it to their advantage to notify us of the retail price of the books sent for review.

PRACTICAL LESSONS IN IDIOMATIC FRENCH. Embracing Reading, Composition, and Conversation. By Alfred Hennequin, M. A., Instructor in French and German in the University of Michigan, etc. New York: D. Appleton & Co.

NEW FRENCH METHOD. By F. Duffet. Revised and adapted to the use of American Schools and Colleges by Alfred Hennequin, M. A., Instructor in French and German in the University of Michigan. Van Antwerp, Bragg & Co., Cincinnati.

HELMICK'S AMERICAN JUVENILE SPEAKER AND SONGSTER. By C. A. Fyke. Bound in boards, 127 pp., price 40 cents. Cincinnati, F. W. Helmick.

PARLOR VARIETIES. Plays, Pantomimes and Charades. By Emma E. Brewster. Boston: Lee & Shepard. San Francisco. Doxey & Co. 261 pp. Price 30 cents.

A SELECTION OF SPIRITUAL SONGS FOR THE SUNDAY SCHOOL. Selected and arranged by the Rev. Charles S. Robinson, D. D. New York: The Century Company.

TENNYSON'S PRINCESS. Recast as a drama. Boston: Lee & Shepard. San Francisco. Doxey & Co.

MOTHERHOOD. A Poem. Boston: Lee & Shepard. San Francisco: Doxey & Co. Price \$1.50.

PRACTICAL LOGIC. By D. S. Gregory, D. D., President of Lake Forest University, Philadelphia: Eldridge & Brother. 218 pp. Price \$1.15.

THE NEW METHOD, OR SCHOOL EXPOSITIONS. By Heber Holbrook. Indianapolis, Indiana: Normal Teacher Publishing House, J. E. Sherrill, proprietor. 143 pp.

GERMAN WITHOUT GRAMMAR OR DICTIONARY; or, a Guide to Learning and Teaching the German Language according to the Pestalozzian Method of Teaching by Object Lessons. Part I. By Dr. Zur Brucke. New Edition, Revised and Enlarged. Chicago: S. C. Griggs & Co. 1881. Pages 176.

WORD-BUILDING; for the Use of Classes in Etymology. By S. S. Haldeman, LL. D., M. N. A. S. Philadelphia: J. Lippincott & Co. 1881. Pages 58.

LITERARY NOTES.

We are requested to announce the following: "A volume of the Proceedings of the National Educational Association, at its last annual meeting at Atlanta, Ga., will be sent postage prepaid to any one sending \$2 to W. D. Henkle, Salem, Ohio. The names of all persons remitting \$2 will be printed in the volume in the list of members for 1881, provided the remittance be received before the printing of the names. Life membership in the association costs \$20. The secretary, W. D. Henkle, solicits correspondence in reference to the volumes of previous years, copies of those for 1865, 1866, 1873, 1874, 1876, 1877, 1879, and 1880, being still on sale."

The Bureau of Education of Washington performs a valuable service in printing and distributing educational writings of value. We have received recently the following pamphlets: Report on the Teaching of Chemistry and Physics in the United States, by F. W. Clarke; The Spelling Reform, by F. A. March; The Construction of Library Buildings, by Wm. F. Poole; The Relation of Education to Industry, and Technical Training in American Schools, by E. E. White; and Spelling Reform, by Prof. March.

The *Atlantic* for November contains among other articles, Among Lowell Mill-Girls; a reminiscence, by Lucy Larcom; When Did the Pilgrim Fathers Land at Plymouth? by S. H. Gay; The Romance of Modern Life; The Theory of a Common Origin for All Languages, by John Fiske; and the two serials, by W. D. Howells and Henry James, Jr.

The November *Appletons' Journal* contains, Rambles Among Books; Arab Humor; Over-Production, by Col. George Chesney; An Adventure in the Philippine Islands; and Saints and Sinners, the conclusion of a story from the French of Victor Cherbuliez.

It is impossible to speak too highly of the beauty of *The Century Magazine* (Scribner's) for November. The frontispiece is a fine portrait of George Eliot—a work of art. In this number are represented Mary Halleck Foote, Mark Twain, Mrs. Burnett, Mary Mapes Dodge, James Russell Lowell, E. C. Stedman, Lizzie W. Champney, and others almost equally well-known to fame. This number is the first of volume XXIII, and the prospectus for the current year is something wonderful.

Lippincott's Magazine for November is an excellent number. Beyond doubt, this is the best \$3 magazine published in this country. Among other articles, this number contains, A Walk over Montauk, by Charles Burr Dodd (illustrated); The Valcours (a story), by Sherwood Bonner (illustrated); The Prince de Broglie in America, by James L. Ferrière; Zoological Curiosities (VIII)—Animal Renegades, by Felix L. Oswald (illustrated); Policy 1396 (a story), by Sarah Winter Kellogg; John S. Clarke, Comedian, by William Stuart; Two Sonnets, by Hjalmar H. Boyesen; Almost a Catastrophe (a love story), by S. Foster.

If it be possible, either in wealth of illustrations or in the high literary merit of its contributions, to excel *Harper's*, we should be pleased to know where. Certainly, through the whole range of periodical literature there is but one publication that can be placed by its side for comparison. This November number—a fair example of its average performance—contains two serials, both in the first rank of their kind, by Thomas Hardy and Constance Fenimore Woolson. Among the contributors are Thomas Hughes, John Esten Cooke, Joseph Hatton, John Habberton, Lucy Larcom, Howard Pyle, William H. Rideing, and Virginia W. Johnson. This number concludes volume LXIII.

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NATURAL HISTORY IN THE COMMON SCHOOLS.

BY IDA M. TWITCHELL.

[Santa Maria, Santa Barbara County.]

THIS is an age in which the yardstick of utility is unsparingly used, and nowhere is the tendency more prevalent than in higher institutions of learning. It has measured the dead languages and found them wanting, and "Practical Science" is to-day the watchword of the world.

This is the lesson which ages of educational evolution have bequeathed to us; and we teachers of the common schools would do well to pause and ask ourselves whether or not we are squandering our heritage.

Whom are we educating? Are they not to be the farmers, the doctors, the mechanics, the merchants, and the housekeepers of the next generation? Now the question arises, From the multiplicity of things which we may teach, what shall we select which will best fit our pupils for their life work? We spend much of our time teaching the technical intricacies of the English sentence. I may allow, if you will, that no part of this time is wasted on useless acquisitions, and that we do our work ever so thoroughly; yet, when our pupils are men and women, which think you would be the more valuable to them, to know that the *the* belongs, in the diagram, under the word it modifies, or that air goes into our lungs rather than our stomachs, and should be pure?

Yet grammar comes first in the course. Which would be of more practical benefit to the gardeners, to know the names of the brooks which flow into the Hoang Ho, or the life history of the grasshopper? Yet entomology comes late, if ever, and geography comes day after day for years. I would not disparage the study of word analysis; and yet, knowing that the word flower comes from the Latin *flos*, *floris* would certainly be less useful to most men and women than to know that the real flower of some useful herb comes from the meadow land, and that some other plant will become a noxious weed if allowed to spread; yet, with all this, precedence is given to word analysis.

To convince us that natural history should hold a prominent place in our common-school curriculum, it is not necessary to confine ourselves to the aspect of objective utility alone. All recognize that the mental powers do not develop together. A child must gain ideas of the world about him before he can form conclusions concerning it; he must deal with the objective world first, the subjective later; the real before the ideal; he must perceive before he can reason and imagine. If we put a child to abstract reasoning when his mind is only able to study, by means of his senses, the things about him, we waste just so much of his time, and perhaps discourage him for life; whereas, if we obey Nature's behest by aiding and encouraging the mental development which she has marked out for every human being, fair and well-proportioned minds will bless our efforts.

Now, natural history is pre-eminently adapted to this early training of the percepts. What is of so much interest to the little folks as the toads and the butterflies, the flowers, and their own eyes and ears? Their minds are hungry for just this kind of food, and when they ask us for flesh, shall we give them a stone? No, too long already has unwise teaching cursed humanity; too many of us owe one-sided minds and dwarfed faculties to the ignorance of our instructors of the needs of our childish intellects, to longer neglect this fundamental psychological law.

Then, if the time is surely coming in which our pupils will read lessons from flower-cups and dew-beaded spider-webs, even before the charming little tragedy of the rat and the cat; if technical grammar, arithmetical puzzles, and nine-tenths of the geography we now teach are soon surely to be pushed forward to make room for the study of the real things about us, which we may see and hear and handle, then, while the bells are beginning "to ring out the old, ring in the new," it behooves the teachers of the land, not only to prepare themselves with the knowledge of the new branches, but also with logical methods of presenting them.

In consideration, then, of the approaching needs of our teachers, in all humility I shall submit to your criticism some of the methods which I shall pursue, fully recognizing their crudity and incompleteness.

It is well to commence physiology with little informal talks whenever time admits or occasion invites. For example: If it is necessary to open the window for ventilation, turn to the class on the floor and ask them why it was necessary to have it open; skillfully test the knowledge of the class by ques-

tioning, and add to it what they are capable of understanding of respiration. Tell them where their lungs are; ask them if they have ever seen the lungs of any animal. Most of them have, and those who have not will not be behind after the next time a chicken is dressed at home.

When Jim cuts his finger again, we shall have an excellent opportunity to talk about blood. We will tell them how it runs through our bodies in little tubes; that it is made from the food we eat; that when they are out running and playing they wear out little places in their bodies, and the blood leaves patches for these worn places, and takes away the old shreds and burns them; then, drawing on their knowledge of the lungs, show how the blood unloads its smoke and takes in fresh air.

Before the bones of the body, which they cannot see, are studied, those of the lower animals should be examined. One invitation to bring all the bones they can pick up on their way to school will furnish ample material with which to work. The bones of the body may be conveniently divided into those of the head, upper limbs, lower limbs, and trunk; within these divisions we may place the ultimate classification, teaching names, positions, and, as far as practicable, uses of the various parts of the skeleton.

As the great objective use of the study is to know how to keep the body in health and beauty, I would, as I proceeded with these oral lessons, never omit any lesson in hygiene which I could possibly give.

In teaching physiology to advanced classes, what is known as the "topical method" arouses most enthusiasm in the class. The pupil adheres to no one text-book, but culls facts from all sources, by no means forgetting the grand volume which Nature holds open for us, and thus drawing illustrations, wherever possible, from the lower animals.

The introduction of botany into our common schools need cause but little expense for several years. The scholars at first need but a neat drawing-book, a pencil, a box of cheap water-colors, fresh leaves and flowers, and a teacher.

As to the age at which this should be begun, I should say, let the scholar begin as soon as the law turns him over to us. He must see before he can think; when he begins to reason, he must have something to reason about; then let him begin to gather materials as soon as possible. This will also solve another problem, uppermost in every primary teacher's thoughts, How shall I keep the little ones busy? Equipped as I have above suggested, it is very easy to keep hand and brain employed; not only this, but to give a never to be regretted cunning to the little fingers, to the perceptive faculties strength, and to awaken such an interest in the soul for living, beautiful things as would be utterly wanting in the dead marks A, B, C.

I would have my class of six-year-old children begin by drawing leaves; let them take a leaf a day for the first term—a simple one to begin with; let them draw it on their slates, and correct each other's pictures. I would teach them the names of the parts; as, petiole, blade, stipules, midrib, and veins; then have the pictures neatly transferred to the books, one on a page, leaving room for the flower and fruit. The picture should be colored. Teach them to mix the paints, and let them do the painting the best they can with your

instruction. The results will be crude at first; but have patience, and know that the veriest daub will be more attractive to your young artist-botanist than all the lead-pencil pictures in the world. Give them another leaf, another, and another; have them point out differences and resemblances between the new one and each old one; teach them gradually the simpler technical terms applied to venation, shapes of margins, apices, bases, and entire leaves.

After the pupil has thus become familiar with the leaves of all the commoner plants around him, let him begin with the flowers. First take the buttercup, or some other flower in which the parts are all present, distinct, and simple. Teach them the parts; as, sepals, petals, stamens, and pistils; have the flowers pulled apart, drawn, and appropriately colored as before; have the number of parts counted and remembered, or at least put down in a note-book where, also, if the pupil is advanced enough at the time, might be jotted down the length and width of the different leaves. When ripe, have the seeds collected, counted, and drawn on the page with the rest of the plant. Proceed from plainer to more difficult forms, and have the same comparative work as while studying leaves. Take up the roots and stems in turn, and occasionally require a full-sized plant drawn entire, roots, stems, branches, leaves, and flowers.

Five years of this work would suffice to familiarize the pupil with all the common plants around him, and he is now abundantly prepared to begin to classify. Here, in the present condition of our text-books, the teacher would have difficulty; for, at least as far as I know, there is no manual of botany but is too technical for the use of such a class. Time will surely remedy this; but before the much-needed primary manual appears, the teacher himself could construct one in manuscript, which should cover the flora of the immediate neighborhood. If you complain of the extra work, I would say, that the construction of such a manual would be of incalculable benefit to yourself, and even if it were not, teachers need not hope to be carried to Heaven on "flowery beds of ease."

After the previous drill in analyzing plants, the instructor would find no difficulty in teaching his pupils to arrange them in species, genera, and families. During all this time I would have illustrated defining lessons daily. If the word is sessile, then have each one bring to class a specimen of sessile leaf; if truncate, obtuse, obcordate, or cuspidate, let leaves be brought to illustrate. I would have each pupil collect a herbarium. The plants might be pressed between newspapers, and glued into a herbarium made of printer's paper, with stiff pasteboard for covers. Botanizing picnics would lend interest to the study, and with the acquired skill in drawing, which should ever be kept up, such artistic satisfaction would ensue as to smother all sighs, both of teacher and pupils, for that volatile, indigestible substance known as "primary grammar," which children ordinarily begin to take in large doses at about this age. Nouns and verbs make stiff-looking pictures on their little straight-line diagrams, with never a curve or a color.

Now, with the new work of classification will come another difficulty. I know it will be argued that cramming scientific names is exhaustive work

even for college students, and that to require scholars of eleven years to do it would be sheer folly. But it is this very cramming I would do away with; let pupils in childhood become accustomed to the scientific names of the commoner plants and animals surrounding them, not fifty at once, but gradually, one at a time, and in after years they will thank you, not only for the names already acquired, but for that habit which renders it as easy to remember that a certain spring flower is called *Hepatica acutiloba* as that the new scholar's name is Hephzibah Anderson. I am open to conviction; but it seems to me that a child would not find *Rosa blanda* a hard substitute for wild rose; or, unless he founded his objections on æsthetical principles, decline to change his "Johnny-jump-up" for *Viola pedata*. After three years of this kind of study, the pupil may finish his systematic botany by studying the two great orders *Gramineæ* and *Compositæ*, which, being difficult, have been omitted till the last.

He has now an intimate acquaintance with all the phanerogamous plants of the neighboring woodland, as well as with those of his father's meadow; still he has not a good common-school education in botany unless he knows something of the intimate structure of plants, and has some idea of how they grow. To study this part of the science successfully a microscope is indispensable, and the time is surely coming when school directors will be as anxious over the price of the improved eye-piece, as they are now over that of the new chain pump. The structure of the stem and leaves may be studied from specimens preserved in alcohol. I would still teach by drawing. Let sections be made through the stems, roots, and leaves, magnified, and drawn. If no text-book is available, give a few simple lectures on the economy of the palisade cells, the stomata, the nature of protoplasm, and the like. Beans, corn, or acorns may be germinated in the school-room, and from an examination of these specimens, as wholes and in sections, the student will gain a very thorough knowledge of the beginning of growth.

Supplementary to all this, before declaring the child through botany, and now ready for the use of the mental powers which mature latest, I would give a very abridged course in economic botany. Tell them whence come the foreign fruits, spices, coffee, and rice. Tell them of the principal timber-trees of the world, and of some of the wonderful plants. They would never regret the time spent in learning the difference in the preparation of the black and green teas, and the exceedingly appetizing fact that every leaf of green tea is rolled between Mongolian fingers while it is drying on copper plates. Learning of the tree that bears bread for the baking, and of that which bears milk for the chopping, would take them to the wonderland of botany. It would introduce them to the psychological problems of time and space to tell them of our own greatest vegetable productions—the trees of the Yosemite which were centuries old when Columbus was born.

Now, unless it be thought best to give in lectures the rudiments of what is popularly known as cryptogamic botany, I would pronounce the common-school course completed.

The study of zoology in this winterless State can proceed arm in arm

with botany. In the former, as well as in the latter, the thing should be studied first, the name afterward. Too much cannot be said against the method pursued in some schools of requiring pupils to cram lists of class names without ever seeing a single representative of the class. It confuses, discourages, and kills all interest in this which should be the most fascinating primary study.

If I taught near the beach, I would begin the work by asking and helping my pupils to make collections of shells, collecting and examining the animals first, learning of their habits, their prey, and their economic value. The shells should finally be cleaned, drawn, and placed in the cabinet. I would not begin the classification until by repeated handling and comparing it would be intelligible to my class; not until they had been led to discover resemblances by which to unite species into genera, and note differences which separate genera from each other.

Teachers living inland can find nothing more available than insects to begin with. These should be caught, sketched, and mounted on pins in the insect box. By and by some boy will discover that part of his insects have hard crusts for upper wings, and will wonder if there is not some particular name for that kind; then, when the idea is in his head, he may have the name, but not before. Another will discover that some of his have only two wings; then he may know that we call them dipters; and thus I would lead him to see differences, to see resemblances, to classify, and when he has it done, I would add the name. As far as possible, with the magnifying powers at hand, the pupil should be allowed to study the organs of respiration, circulation, and digestion. Throughout the whole, the necessity of sketching the parts seen cannot be too strongly insisted upon, if we wish our pupils to retain the knowledge they acquire.

The great biologists of our time maintain, that the true way to study both plant and animal life is to take some particular species and work it up thoroughly as a nucleus around which to collect knowledge of the nearly related species. For instance, we have Huxley's and Martin's works on the Craw-fish and Frog, and a treatise on the Cat by Mivart.* Now, the idea is, if we study minutely the structure of the muscles of a cat, we shall have a good idea of all muscles. If we study her blood microscopically, we shall have a general notion of the composition of all blood. Her stomach, though differing from all others somewhat, still may remain in our minds as a type. Something like this might be made profitable in our common schools. We cannot examine many fishes, for want of material; why not take one and examine it, not necessarily microscopically, but carefully? We shall have an idea then of all fishes. A frog, a snake, a blackbird, and a rabbit would furnish other types, and would not be difficult to procure.

Now, children enjoy this kind of work, and they understand it easily; why should we not give it to them, and keep back for riper years the studies which appeal to the higher mental faculties? Is there any other reason than to teach them early that life is a dreadfully solemn thing?

* I have not examined Mivart's work; but, from the advertisement, I judge it to be of this nature. Whether it is or not, the illustration is just as good.

If it should be suggested that time would not allow such an extended course in natural history, I would mention several things that are not as they should be. Very much time is wasted in our common schools between the ages of six and twenty-one in very many ways. While irregular attendance and want of thoroughness are wasting processes with which all teachers are acquainted, one no less fatal in its results, extending throughout our whole land, is due to wrong grading. Days and months are lost because the child is vainly endeavoring to drive his mind to a work for which it is not yet prepared. He wastes time by imperfectly reasoning, while he should perfectly observe.

Let us strive as teachers to remedy these leaks in our school system, and we shall wonder as we see time lengthening and broadening before us.

Ten or eleven years is too much time, do you say? How many years generally elapse between the simple problem, "Two and two make four," and the completion of the study of arithmetic? Is that time not ten or eleven years, too? And who shall say that natural history is less important than arithmetic? At the age of fifteen or sixteen, when botany is cast aside, zoology may go with it; and now the lower faculties, strengthened by long use, form a fairly proportioned foundation on which to erect the towers of imagination and the citadels of reason.

THAT SWAMP OF DEATH.*

A CITY BALLAD.

BY WILL CARLETON.

YES, it's straight and true, good preacher, every word that you have said:
Do not think these tears unmanly—they're the first that I have shed.
But they kind of pressed and pounded on my aching heart and brain,
And they would not be let go of, and they gave me extra pain.

I'm an ignorant day-worker—work for food and rags and sleep—
And I hardly know the object of the life we slave to keep;
But I know when days are cheery, or my heart is made of lead;
I know sorrow when I see it—and I know my child is dead.

No, she isn't much to look at, just a plainish bit of clay,
Of the sort of perished children you are seeing every day;
And how *she* could break a life up, you'd be slow to understand;
But she held *mine*, Mr. Preacher, in that little withered hand.

* Too great praise cannot be awarded the Harper publications for the broad humane views, the high moral grounds, the philanthropic tendencies, which characterize their utterance and conduct. *Harper's Weekly* may be termed a modern St. George, battling the hydra-headed monster of fraud and vice and filth and disease, of every social iniquity. The pen of Curtis and the pencil of Nast are weapons more powerful than sword or lance of old. "That Swamp of Death" is Hunter's Point, New York, where oil refineries, chemical works, etc., infected the air of the lower portions of the city. Despite a law defining these industries as a nuisance, and providing for their removal, no effective steps were taken to abate them, until this crusade (a holy war, indeed!) by *Harper's Weekly*—truly a journal of civilization." [EDITOR JOURNAL.]

I am just a laboring man, sir, of the kind that digs and delves,
 But I've learned that human natures cannot stay in by themselves;
 They will wander out for something, be it good or be it bad,
 And my heart with hers has settled, and the girl was all I had.

There are lots of pretty children, with a form and face more fine—
 Let their parents love and pet them—but *this* little one was *mine*!
 There was no one else to cling to when we two were cut apart,
 And it's rough—this amputation of the strong arms of the heart!

'Tis consoling, Mr. Preacher, and it's maybe as you've said—
 God loves children while they're living, and adopts them when they're dead;
 But my brain won't quit contriving, do the very best I can,
 That 'twas not God's mercy took her, but the selfishness of man.

Why, she lay here, faint and gasping, moaning for a bit of air,
 Choked and strangled by the foul breath of the chimneys over there;
 For it climbed through every window, and it crept beneath the door,
 And I tried to bar against it, and she only choked the more.

She would lie here with the old look that poor children somehow get;
 She had learned to use her patience, and she did not cry or fret;
 But would lift her pale pinched face up, full of early grief and care,
 And would whisper, "I am dying for a little breath of air."

If she'd gone out with the zephyrs, 'twouldn't have seemed so hard to me,
 Or among the cool fresh breezes that come rushing from the sea;
 But it's nothing less than murder when my darling's every breath
 Chokes and strangles with the poison from that cursed swamp of death.

Oh, 'tis not enough that such men own the very ground we tread,
 And the shelter that we crouch in, and the tools that earn our bread;
 They must put their blotted mortgage on the air and on the sky,
 And shut out our little heaven, till our children pine and die!

Yes, we wear the cheapest clothing, and our meals are scant and brief,
 And perhaps those fellows fancy there's a cheaper grade of grief;
 But the people all around here, losing children, friends, and mates,
 Can inform them that affliction hasn't any under-rates.

Oh, the air is pure and wholesome where some babies crow and rest,
 And they trim 'em out with ribbons, and they feed 'em with the best;
 But the love they get's an insult to the God of love on high,
 If to earn those children's living some one else's child must die.

I'm no grumbler at the rulers of this "free and happy land,"
 And I don't go round explaining things I do not understand;
 But there must be something treacherous in the steering of the law
When we get a dose of poison out of every breath we draw.

I have talked too much, good preacher, and I hope you won't be vexed,
 But *I'm* going to make a sermon, with that white face for a text;
 And I'll preach it, and I'll preach it, till I set our people wild
 'Gainst the heartless, reckless grasping of *the men who killed my child.*

—Harper's Weekly.

THE KING'S ENGLISH.

BY J. RUSSELL WEBB.*

REFORM means to form over, or to change from bad to better, or good. That English spelling is bad, and must be formed over before it becomes good, is well known. The simple object of spelling is to give to words form of which the eye can take cognizance.

Words are vocal sounds used to convey ideas from one mind to another. Written words are simply machines which Mother Necessity invented for our convenience. With equal durability and effectiveness, the machine that is simplest in construction and most easily worked is the practical man's choice.

The alphabet was not devised till it was discovered that a single word, as *me*, was not a single sound, till it was discovered that many words, as *me*, *see*, *be*, *we*, had a sound in common; and it was devised to take advantage of that newly discovered peculiarity to simplify word-making; for, until that time, each *word*, not each *sound*, had a sign of its own.

No rational man will doubt that originally only one character was devised to represent the *e* sound heard in the above words, nor that the remark applies to the signs for the other elementary sounds. As a matter of course, then, it follows that it was intended to use these characters as sound representatives in making words; that is to say, that written words, like spoken words, were originally fonetic, or, at least, were so intended to be. But practically, it matters little whether they were or not. That this is not the case now, the following words, which are fair representatives, will clearly show: No, not, done, sew, beau, hoe, though, all, law, fraught, ought, use, us, put, rule, enough, may, prey, vein, eight, at, art, any, what, love, word, her, myrrh, sir, bur, earth, high, my, height, lie, note, goat, soul, bowl. And these words hardly begin to show the different sounds given to the vowels, or the different combinations representing them; indeed these sounds and combinations are numbered by the hundreds. The letter *a* has eight of these sounds, and long *a* thirty-four of these representatives; the letter *e* has eight of these sounds, and long *e* forty of the combinations to represent it; the letter *i* has six of these sounds, and thirty-four combinations represent long *i*; and a similar diversity exists in the other vowels. It is fortunate that the human mind is hopeful, trusting, and elastic; that in the matter of learning to read and spell, we "walk by faith and not by sight," else the difficulties in the way would be insurmountable—to sane adults too appalling even to attempt to master.

The following illustrations will show that great advantage would accrue from spelling words with more uniformity, and more nearly as pronounced. We now spel *be*, *he*, *we*, *go*, *no*, *so*; why not spel *ba*, *ha*, *wa*, *bo*, *si*, *hi*? We spel *red*, *bed*, *led*, *sin*; why not spel *hed*, *bred*, *sed*, *siv*, *liv*, *hav*? We spel *mate*, *hate*, *lake*, *like*, *bone*, *zone*, *vote*, *lute*, *mere*; why not spell *gate*, *grate*, *frate*, *strate*, *lite*, *fite*, *bote*, *gote*? In these words the silent letters are omitted,

*Prof. J. Russell Webb is the author of the "Word Method" of teaching reading.

excepting the final *e*, which is retained to denote that the preceding vowel is long. Words of two or more syllables can *folo* the same rule; as *awa*, *beleve*, *forgiv*, *boka*, *delite*, observing to retain the spelling of the primitiv words in derivativ and compound words (unless the pronunciation requires a change, as *derive*, *derivativ*), as *hi-est*, *hed-less*, *spel-ing*, *make-ing*.

It is objected that these spellings make too great changes in the looks of words. Does any one object to a new machine that will do as much again labor as his old machine, and at one-half the expense, simply because it does not look like his old one? Improvement means change. The very word "reform," as I have before said, means to form again, to change form. Such objections are trivial.

The question of just how to reform our spelling is at once simple and difficult. It is simple so far as to a knowledge of how it should be done. Without doubt, the fonetic idea is filosofically the correct one on which to make it. But the experience of the last forty years proves that *Filosofy* is not *King*. There are other elements that must not be ignored if we would hav success. To me it seems quite clear that a compromise between what *ought to be* and what *is* must be made; and after a great deal of thought on the subject for more than thirty years, I hav concluded that the scheme which I here present has in it more elements of success than any other. It adds but four new letters (to represent the vowel sounds heard in *far*, *for*, *do*, and *full*), and omitting one (*q*), making twenty-nine letters in the alfabet. *C* and *x* are retained; so also are the difthongs and digrafs, as concessions to the eye.

With the changes which I propose, our written language, while retaining sufficient of its present characteristics to be easily read by any ordinary reader of the present spelling, would approach so nearly the fonetic standard as to save at least nine-tenths of the time and labor now required to learn to read and spel it, while it would not, unnecessarily, antagonize the prejudices of the people, a most important factor for winning success. At the same time it is comprehensiv as well as simple and practical, and requires no changes for which we hav not good authority in our present spelling.

That the English spoken language is one of great power, that it has sufficient vigor and force to make its presence and use universal, that it has in itself enough innate beauty and goodness to mark its progres with blessings, and to make its victories triumphs for human progres, other nations concede. That its *written* language would posses all these qualities if it truly represented the spoken, no one denies.

Are not the blessings that would come to our children, to ourselves through them, to the universal family of man, sufficient inducement to overcome any dislike to change of word forms? If not, will not our "pride of language," our ambition that the English tung may become universal, and these inducements have enough weight to overcome our apathy, our prejudices, and cause us to throw our influence in favor of reforming our spelling—a reform with which no other compares in present and future benefits?

Remember "time is money." It is more: it is life, and life is the gift of God—his first best gift to man. To waste it, is to sin. Every child wastes,

loses outright, years of time in learning to read and spel "tolerably well," and millions in time and money are lost annually to the English-speaking race on account of our "standard spelling." And then consider the *illiteracy* of the poorer classes. With them time is money, and money means bred. The stomach is an autocrat; its commands must be obeyed; but the mind for whose use the stomach and all its appendages were made, often, alas! too often ignores, loses its hungerings, resigns the mastery, and stoops to be its servant—and a most abject one, too, it often is. And that it lives a dwarf, starved and dying, not as one "made a little lower than the angels," but as one only a trifle higher than the brute. Our spelling hides knowledge and discourages efforts to find it; and because of it, Ignorance, the mother of crime, walks unblushingly in the sunlight of the nineteenth century. Those who persist in resisting reform are responsible for the lost time, the ignorance, and the crime caused by our present unphilosophical and abominable spelling.

The following is the scheme which I propose for reforming English spelling:

RULE I. OMIT SILENT LETTERS.

Examples.—Wil, se, hi, eg, hed, hav, tung, rote.

NOTE.—A final silent *e* is used in words ending in a *single* consonant-sound preceded by a *long* vowel-sound. *Ex.*, *vote*. Such words as *cold*, *mind*, hav no final silent *e*.

RULE II. REPRESENT THE SOUNDS heard in the words, by the letters assigned to them in the following "Alfabet Chart."

THE ALFABET CHART.

a in ate and at.	n in no and ink.	z in zone and azure.
a in art, far.	o in own and got.	
b in by and cab.	*in or, all.	DIGRAFS.
(c(ke=k in can.	† in ooze, do.	ch in chip.
d in day, bad.	p in pin, lip.	sh in ship.
e in ear and met.	r in rat and more.	wh in whip.
f in for, off.	s in so, this.	th in the and thin.
g (ga) in go, bag.	t in ten, net.	ng in sing.
h (he) in ho.	u in use, tube, and tub.	
i in ice and in.	u in fuell, good.	DIFTHONGZ.
j in jug.	v in vat, ov.	{ oy=*i in boy.
k (c and q) in keg, kat, kwit.	w (we) in wo.	{ oi=*i in oil.
l in lay, tell.	(x=ks and gz in ox and exist.)	{ ou=ot in out.
m in me, am.	y (ye) in you.	{ ow=ot in how.

* New letter like an o with a horizontal bar across the middle.

† New letter like an o with a re-entrant angle at the bottom.

Examples.—Mi, iz, eni, sed, wisht, tha.

NOTE.—Where a sound has more than one representativ, the choice should incline toward the fonetic, but either spelling wil be regarded correct; as, *blac* or *blak*, *ax* or *aks*, *exist* or *egzist*, *boy* or *boi*, *cat* or *kat*.

RULE III. IN DERIVATIV and compound wurdz, retane the spelling ov the primitiv wurdz.

Examples.—Sin, sining, sinur, sind. Sine, sineing, sineur, sined. Make, makes. Go, goze.

NOTE.—The singular ov nounz and the plural ov verbz wil be regarded az primitiv wurdz. The final silent *e* ma be dropt when the aded silabl beginz with an *e*. *Ex.*, shade, shaded.

The formula—*No, Not, Note*—givn belo, wil ade in apliing the rulz. It represents thre clasez ov wurdz, and embrasez nereli al the monosilablz (and silablz ov uthur wurdz) having long and short vowelz:

1. *No* represents wurdz ending in a vowel-sound. In this clas the vowel iz alwaze *long*. *Ex.*, may, see, high, dough, new.

2. *Not* represents wurdz ending in a singl consonant (or digraf) preseded bi a singl vowel. In this clas the vowel iz alwaze *short*. *Ex.*, mat, set, hit, dot, nut.

3. *Note* represents wurdz ending in a silent *e* preseded bi a singl consonant. [The silent *e* iz used simpli to indicate that the presedeing vowel is *long*. Such wurdz az have, give, native, infinite, belong to second clas, and drop the *e*.] In this class (3) the vowel iz *long*. *Ex.*, mate, ride, bone, mule, use, polite.

Wind ma represent wurdz ending in more than wun consonant. In this clas the vowel iz *long* or *short*—the wurdz and context wil alwaze tel which. But the silent *e* (3) *ma* be used if thar iz a similar wurd with a *short* vowel; as lest, leste, wind, winde.

FORMULA.

1.	2.	3.	1.	2.	3.	1.	2.	3.
Long vowel.	Short vowel.	Long vowel.	Long vowel.	Short vowel.	Long vowel.	Long vowel.	Short vowel.	Long vowel.
<i>No</i>	<i>Not</i>	<i>Note</i>	<i>No</i>	<i>Not</i>	<i>Note</i>	<i>No</i>	<i>Not</i>	<i>Note</i>
ma	mat	mate	hi	hit	hite	ro	rot	rote
ra	rak	rake	ri	rit	rite	go	got	gote
be	bet	bete	mi	mil	mile	nu	nut	nute
se	set	sete	bo	bot	bote			

In our alfabet chart the vowelz *a, e, i, o, and u* hav eche a “long” and “short” sound az distingwisht by Webster. The *u* in *use* iz the *y* sound prefix to long *u* in *mule*. The vowel soundz in *far, or, do, and full* ar represented bi nu karakturz. The sound ov *a* in *care* is represented bi *a*, that ov *a* in *fast* bi *a* or *a* in *far*; that ov *e* in *her* bi *u*. Al the vowels (9) ar uzed az wurdz. *E* when so uzed, iz short. Ov the consonantz, *n, z, and th* represent the soundz. *R*, in *more*, iz almost a vowel-consonant, and *ma* represent the *ur* sound heard in *her, sir*, etc. When so uzed, plase a dot ovur it; and in oral speling cal it ur. Spel hur or hr, wur or wr, etc. *Q* is oमित; *c* and *x* ma be if dezired. In time, singl leturz for the digrafs and difthongz wil be desirabl.

Our alfabet marks onli the soundz that ar clereli distinct to the “comun pepl.” Nise shadez ov pronunshiashun must be taught orali. An alfabet to sucsede must be adapted to the mas rathr than to the fu.—*Chicago Inter-Ocean*.

A CHINAMAN is as patient as a pyramid.

SOLITUDE is the audience chamber of God.—*Landor*.

DISCOURAGE cunning in a child; cunning is the ape of wisdom.—*Locke*.

A FEW QUESTIONS ABOUT PRIMARY
READING,

AND HOW THEY WERE ANSWERED BY FIFTY EXPERIMENTS TRIED.

BY C. M. DRAKE,

[Scenega, Ventura County.]

ABOUT fifteen years ago I began to keep a record of some of the experiments I was trying in the school-room. In books of Theory and Practice I found a wide disagreement as to the value of different methods, and a great lack of definite knowledge of a certain kind. Of generalities, I found an abundance; of assertions, more than I thought could be proved; and the actual results of methods I had tried seemed to be in conflict with the experience of others. I have selected from fifty records one marked *a*, a bright six-year old boy; *b* represents the average of the fifty experiments; and *c* the record of a dull child six years old. I have taken for *a* and *c*, not the very brightest of the fifty nor the very dullest, but ones representing about numbers 5 and 45, if the fifty pupils were arranged in the order of their ability. The instruction in every case, except in two schools, was given solely to one pupil at a time; and, except in certain cases, the pupils were not classed until the Second Reader was begun. I generally spent fifteen minutes a day on each pupil. While I believe the personal equation represented by the teacher is of great value in any experiments of this kind, still I think most of the results will be found to agree with the results of others who work with the same care and interest in their work.

Question I. How many new words can a child learn to recognize in one lesson?

a Four in the first lesson, ten in the twentieth, ten in the sixtieth.

b One or two in the first lesson, six+ in the twentieth, seven in the sixtieth.

c None in the first lesson, one+ in the twentieth, five in the sixtieth.

Question II. How many words can a child learn to spell in one lesson?

a Two in the first lesson, six in the twentieth, eight in the sixtieth.

b One in the first lesson, five+ in the twentieth, seven in the sixtieth.

c None in the first lesson, two+ in the twentieth, five in the sixtieth.

Question III. How many times must a word be told by the teacher before the child can call the word without help?

a Three+ in the first lesson, one and a half in the twentieth, one and a third in the sixtieth.

b Six+ in the first lesson, two+ in the twentieth, two in the sixtieth.

c Thirteen in the first lesson, seven+ in the twentieth, two+ in the sixtieth.

Question IV. How long can a child read with profit at one time?

a Beginning with ten minutes, in a month could read about twenty min-

utes without being too tired to pay reasonable attention. This includes spelling.

b From eight minutes to fifteen.

c About the same as *b*, but varying more on different days.

Question V. How many times a day can a child read with the most profit?

For all children two lessons of seven minutes each appeared better than one lesson of fifteen minutes. For most pupils three lessons were about twenty per cent. better than two; but four lessons of ten minutes each gave poorer results than either two or three lessons of like length. Two lessons a day of twelve minutes each gave as good results as three lessons of eight minutes each, and in some respects seemed more effective.

Question VI. Shall we use charts, readers, blackboards, or slates when we start a pupil in reading?

For a *class* the blackboard proved far the best, but for single pupils I found a slate better for a week or two, then the book. Charts are not desirable except for variety. They are a poor mainstay.

Question VII. Shall we sacrifice quantity for quality?

Every experiment I tried said no, most emphatically. While a certain attention to quality is most necessary, I believe the advancement of the pupil depends very much upon the quantity read. To read the lesson over more than twice in one recitation I found not desirable. After the twentieth lesson, I found it best to have the pupil read about four pages, three in review and one advance. In reviewing the fifth or sixth time, even eight pages could be read.

Question VIII. How well should a child read a lesson before leaving it finally?

The child should be able to read the lesson without stopping to spell any word; he should give the inflections properly; and be able to tell in his own language what the lesson says.

Question IX. How many times do the lessons need reviewing?

The first ten lessons, from thirty to forty times.

The next ten lessons, from twenty-five to thirty times.

The middle of the book, about ten times; and the latter part of the book at least four times.

Question X. How many days does it take to do the above work, hearing a pupil twice a day?

a Fifty days, *b* eighty days, *c* one hundred and fifteen days. In the case of *a*, it was not necessary to review the lessons so many times. After they have gone through one first reader, it takes from two to five weeks to read another first reader through, and with the duller pupils, I found it advantageous to read a third book before entering the second reader. This is not included in the above time.

Question XI. Which learn to read the more quickly, girls or boys?

The difference is very slight, on the whole; but my experience seems to be this: Girls learn to recognize words they have been told more quickly; boys

find out words more readily without help; girls read with more feeling, boys with the better understanding—an apparent paradox. Girls have a better appreciation of the shape of letters; boys associate the sounds with the letters more readily. Of the fifty pupils, the twenty-eight boys got into the Second Reader in an average of ninety-three lessons; the twenty-two girls, in an average of ninety-one lessons, about five and a half months.

Question XII. How much does experience help a teacher?

From the nature of the question, it is impossible to do more than roughly approximate results, as experience may in one case teach one to use a far better method, or the main gain may be in the greater interest or impressiveness of manner, or the children may greatly vary. Ten years ago, I counted it as nine months' work to take a child properly through the first readers. Five years ago, I thought six months enough for an average child. Now, if the child is not dull, I think they will average about four months and a half in passing through two first readers a sufficient number of times. This is supposing them to attend every day, and to read twice a day for ten minutes at a time. Though looking at results obtained five years apart, I can see a great gain; yet two successive years have several times shown an apparent loss, due mostly to a want of personal interest in the pupils, as I find it impossible to teach a child I cannot like sixty per cent. as well as I can a lovable child, however hard I try.

Question XIII. How much difference does it make whether the spelling, the word, or the phonic method is used?

Here I must confess I do not know. That difference in favor of any one is great I do not believe. The real difference seemed to be in the interest shown by the teacher, in his impressiveness of manner, in his enlivening the lesson by questions and remarks thrown in, in his having a clear object to aim at during the lesson, and a perception of the final end desired.

Question XIV. How do children recognize words?

In the first twenty lessons, I find that the place the word occupies on the page, the picture near the reading, the first one or two letters of the word, and lastly, the context are mainly the things which cause the child to recognize the word. As the child progresses, the context becomes more and more important, and the child looks more at the word as a whole. The attention of the child is usually more fixed upon the upper part of a letter than on the lower half. Words are often recognized by their containing a certain letter which is seldom used, like *j*, *x*, or *z*. I always think it is a good sign when a pupil depends so much on the context that he puts in words of similar meaning in the place of those in the book.

Question XV. When does a child tell a new word at first sight, and how?

a Told *can* at first sight after learning eleven other words.

b Told the eighteenth or nineteenth word on an average.

c Told the twenty-first word without help.

In most cases the context helped, but in many cases by dwelling on *cat* and *rat* and *can*, the word "*ran*" could be told by the sound of the other

words using the letters only, and letting the children tell by comparison what sounds the letters stood for.

After reading about six weeks, I find the children in many cases will read new words in sentences at first sight with readiness, though of course they have to be told some words in almost every lesson.

Question XVI. Are children aided by the stops in giving the proper inflection?

Very little indeed, if any. The form of the sentence and the context is what they do and should depend upon. I think it not advisable to pay attention to periods, commas, etc., until the child begins to copy sentences from the book. The spacing does help a little.

Question XVII. When should script letters be used, and how?

In mixed schools, during the first month, I have the beginners do nothing but read, spell, and amuse themselves on the slate or the blackboard. Then I gradually assimilate my slate or blackboard letters to the written type. After the second month, I gave them one, two, and finally three or four of their misspelled words written aright on little slips of paper, and they copy these words on their slates while learning the words. I take the *new* slate of each, and on the frame I write with lead pencil all the letters and figures, and then trace them over with ink. These they copy, and with a little showing soon become fair writers. Every new letter or figure should be made the first few times under the eye of the teacher, as the child unaided will often begin in the wrong place, get wrong forms, and use the pencil awkwardly. The instruction should be individual at first. The pupil should read writing fairly well before trying to write.

A MAN fell asleep as the clock tolled the first stroke of twelve. He awakened ere the echo of the twelfth stroke had died away, having in the interval dreamed that he had committed a crime, was detected after five years, tried, and condemned; the shock of having the halter about his neck aroused him into consciousness, when he discovered that all these events had happened in an infinitesimal fragment of time. Mohammed, wishing to illustrate the wonders of sleep, told how a certain man, being a sheik, found himself for his pride made a poor fisherman; that he had lived as one for sixty years, bringing up a family and working hard; and how, upon waking up from his long dream, so short a time had he been asleep that the narrow-necked gourd-bottle filled with water, which he had overturned as he fell asleep, had not had time to empty itself. How fast the soul travels when the body is asleep! Often when we awake we shrink from going back into the dull routine of a solid existence, regretting the pleasanter life of dreamland. How is it that sometimes, when we go to a strange place, we fancy we have seen it before? Is it possible that when one has been asleep the soul has floated away, seen the place, and has that memory of it which so surprises us? In a word, how far dual is the life of man? how far not?

EDUCATIONAL GROOVE-RUNNERS.*

BY W. B. TURNER.

THE successful teacher, above all other professional workers, must be a person of expedients. The ability to receive, germinate, and develop seed-thoughts, in the shape of hints received from co-workers, as practically applied in their schools or theoretically expounded at their annual Institutes, constitutes one of the good tests of a successful and progressive teacher. When a man becomes too old or too wise to learn from others, it may safely be asserted, that he is become too old to teach others.

As the profit received in reading a good book depends more upon what the mind digests and assimilates, than in the number of pages traversed, so the amount of good received in attending a Teachers' Institute depends more upon the new ideas received, and good, practical educational hints carried away, than in the number of hours or days spent there. Teachers too often so far lose their professional spirit and enthusiasm as to consider such affairs necessary evils, where one is expected to submit mildly to long and mayhap dreary platitudes from lecturers, or witness a series of ground and lofty tumblings from men in the educational circus, who have hobbies to ride. It is one of the provinces of the Institute to pry teachers out of the educational grooves, switch them off onto new tracks, and perhaps replenish a depleted stock of aspiration and energy. To that end, it is necessary that the members should cease being passive recipients, and become active participants, ready and willing to do all in their power to do good, as well as to get good. It has been truly said, that a teacher can learn something of practical benefit in every school he may visit—something to imitate or something to avoid. How much more, then, in an assembly of those united by a common purpose, with similar hopes and aspirations, ought all to receive benefit by the attrition of mind with mind and the exchange of ideas? Little germs of new ideas carried hence may and ought to develop into growths that will rightly shape the future career of many a child in the common schools.

It is often said of a young teacher, "His first school was his best one." And was there a reason for it? Doubtless. He started in with everything new and all to learn. For the first term, the novelty of the thing kindled enough enthusiasm to keep the school alive and awake, even if not conducted with all the skill acquired by experience. But gradually he settled down into a monotonous and humdrum rut, and became that most unfit person for a teacher—an educational groove-runner. "But," asks one, "would you discard system and rule and order?" By no means. No one values more highly those indispensable aids in the school-room than the writer. But life and variety are not inconsistent with system and discipline. If you have adopted a cast-iron system of rules that must be broken before a change is made, better break them, and, throwing them aside, adopt a set flexible enough to bend a little when needed. A teacher, with the best of intentions, may be-

* A paper read before the San Mateo County Teachers' Institute.

come so systematic and machine-like as to kill all enthusiasm in the souls of his pupils. They have the same mental bill of fare week in and week out, until the appetite palls and an *ad nauseam* point is reached. Even a teacher with a hobby is preferable to the mechanical being who has nothing to relieve his monotonous droning. A mathematician who would make the sky a black-board, and all the hills chalk; a penman who would like a foolscap farm, with living springs of ink, and fitted with Gillott's 404 plows; or even the man who wants to publish a new grammar—is preferable to the man who has got down in a rut.

The life of a teacher at best has much of sameness in it, and constant vigilance is necessary to keep alive his own enthusiasm and the interest of his pupils in their studies. A groove-runner soon degenerates into a mere pedant. Losing thus his own personality, it cannot be expected of him that he can impress himself strongly upon the minds and characters of his pupils.

The secret of the great success of the Kindergarten is, that the schools are made so attractive that the children cannot be induced to remain away. The same principle may hold equally good with children of a larger growth. By tact and forethought, the regular recitation and various exercises may be so fraught with interest, as to cause the scholar who loses them to feel that there has been a loss indeed. Imbue your scholars with the feeling that they are as deeply concerned in the welfare of your school as yourself. Instead of it being "my school" and "my classes," let it become "our school" and "our classes"; and it can soon be proved, that a teacher may be brought into such close relations with his pupils, that instead of his being merely an aid to them, they will be mutual aids to him and to each other.

We all like to see a school in which everything runs like clock-work; where the teacher governs without seeming to govern; and where recitations are conducted with a vivacity that is as cheerful as it is interesting. This is the golden mean for which we should strive, and it is as far removed from the cast-iron system which will not bend, as it is from the lack of all system, where the teacher is continually dilly-dallying with new plans and hobbies, when he can spare the time from the government of his unruly tribe. But in learning from the experience of others, how often do teachers throw aside independence of thought, becoming servile imitators who *adopt* methods, instead of *adapting* them. Every man's plan is best for himself; and, as David could not fight in Saul's armor, so it is seldom that any method is found so perfect as to be suitable for all times, persons, and places, without some alterations.

Methods will keep. It is not necessary or advisable, that a teacher fresh returned from visiting other schools, or with a mind stored with the wise saws acquired at an Institute, should attempt to put all his new plans into practice at once. In such a case, he is apt to deluge the young ideas under his charge with crude attempts at reform, without doing justice to his pupils or his plans. Such a practice is too apt to convince him of the futility of a change, and he settles back into the old ruts in a worse condition than at first. But times occur in every school when a well-considered change may be introduced, and while scarcely causing a ripple in the regular work, yet lightens all in no

small degree. These introduced at sufficient intervals may prove of incalculable benefit.

By way of practically illustrating the foregoing remarks, the writer wishes you to glance with him at some of the classes in a school he occasionally visits, and whose teachers try to keep clear of the educational ruts. It is the first recitation in the afternoon. A large class in Reading is being heard. When a time comes when we can converse with a teacher, we are informed that a deep interest is excited through the class by the plan followed—a familiar talk, with questions about the author whose writing has been the subject of the day's lesson; by inquiring if any of his works are in the school library, and if so, how many have read any of them, and how many others will make it a point to do so; by reading to the class extracts from the aforementioned works sufficient to excite their curiosity, and impel them to a further investigation for themselves. If a moral truth needs to be illustrated, occasional miscellaneous literary selections are substituted for the formal reading lesson of the text-book. Occasionally readers are laid aside altogether, and reading lessons assigned from Ridpath's United States History, or the Pacific Slope descriptions in Harper's Geography, always being accompanied with such remarks from the teacher, or such explanatory readings from library books, as will throw more light on the subject, and lead the pupils to follow up the clews for themselves. With the advance grade who have got beyond the readers, Shakspeare's plays, general history, and various branches of other English literature, are studied with profit. All these things lead to that understanding where pupils cease to "parrot" their words, but clothe them with the meaning which the author intended.

Much the same plan is adopted in the United States History class, which recites latter in the day, excepting, of course, that shorter lessons are assigned. Some notable event or important character becomes the topic of the day, and is so presented that the pupil becomes anxious to find out more about that particular person or event, and is directed where he can find it. Lives of great men and principles of self-government, as set forth in the Constitution, are so dwelt upon as to awaken an intense admiration for our country and its founders. At the close of a chapter, or of a week's work, notes are placed on the blackboard, to be copied into blank-books by the class, embodying the outline of the work traversed, and presenting all essential points necessary for a quick review. Some author has said that geography and chronology are the two eyes of history. But had that author been a teacher, with an experience in teaching dates, he probably would have formulated another apothegm, which, while not so strong, would have better covered the ground, to the effect that geography and biography are the two eyes of history, and that chronology sustains about the same relation to the other two as the eyebrows do to the eyes. By pursuing this course in Reading and History, an interest has been developed in the school library which is remarkable. Books of biography, history, poetry, and general literature, which had become coated with dust for want of use, are fast supplanting the heretofore fascinating volumes of "Oliver Optic."

Geography and History are made to travel together, mutually dependent upon each other. An interesting diversion from the text-book here is found by taking the shipping reports in the columns of any of our city dailies, and have the class locate the source and destination of each cargo mentioned.

Dropping in again the next morning, we see that Arithmetic is made practical and interesting in various ways that suggest themselves; but, as a rule, it does not seem that it is necessary to cultivate a taste here as much as in other studies. Exercises in Mental Arithmetic are given a prominent place upon the daily programme.

It is further proved, that even the dry bones of Grammar become life-like and clothed with flesh, by teaching it in connection with composition and language exercises—the only way it should be taught to young pupils.

In Spelling, the words are taken indiscriminately from the Reading lesson of the same day, and thus again two studies mutually aid each other. Occasionally the pupils enjoy an old-fashioned spelling-match.

The opinion seems to prevail here, that the teacher of any of the various branches of Natural History, whether of animal or plant life, who does not give object-lessons, when specimens are so plentiful in the fields, forests, brooks, and along the beach, brands himself as being lazy. A practical lecture to a Physiology class, having for its text a basket of bones from the butcher shop, with some of the ligaments or muscles still attached, produces a more lasting impression than a week's drill on technical book-terms alone.

In the Book-keeping class, the elements having been mastered, original memoranda to some extent supplant the text-book, and cause the pupil to work more independently; or, if that is not practicable, the memoranda given are by a change of places, dates, and names, brought down to the present, and members of the same class thus have business transactions with each other, giving and receiving notes, making out bills, writing business letters, and so on. In this way, an interest arises, and profit is received far beyond that received by the mere copyist; and the assertion that no practical book-keeping can be taught in the public schools is disproved.

Friday afternoon is looked forward to with pleasure by all as the pleasant ending of a week's work. School does not convene until half-past one that afternoon. The time is first occupied with some general exercise, and then follows the rhetorical class for that week, consisting of one-fourth of the school who entertain the other three-fourths with essays and recitations. Among the essayists, one perceives that there is a class of embryo reporters; for besides the usual school-boy and girl homilies on abstract ideas, and missing altogether the usual essay on "Spring" or "The Horse," we hear this boy read a complete description of his father's new self-binding reaper, and that girl tells how she makes bread; another describes the fine time had at Mary Jones's party, and a young disciple of Izaak Walton describes his troutng experience of the previous Saturday. In their recitations, the boys show an inclination to discard poetry, and give us animated bits of Patrick Henry and John Adams. The girls recite their verses with a freedom of gesture and pose indicating previous rehearsal, and indeed the whole exercises show the oversight and guid-

ing hand of a leader who has ascertained beforehand just what every pupil is going to present, and how it is to be presented. At three o'clock, the afternoon session closes with a quarter of an hour of singing, which is enjoyed by all, shows previous practice during the week, and yet has not undergone repetition until threadbare. Now, while its conductors do not claim that their school is a model, they nevertheless derive much satisfaction from the steady and cheerful progress made by its pupils.

Has it ever occurred to you, that it is pleasant to know when one has completed his work? And yet, how many public schools outside of our large cities ever formally graduate a class of pupils? Some, we grant, but not many. Now, is there any good reason why our public schools should not have their annual June commencement exercises, as well as other schools? By a little forethought, a teacher should be able to follow out a course of study, which would include everything necessary for the applicant for a first grade teacher's certificate to know. If a scholar has a goal in sight, his attendance will be more regular, and his work better, for he is striving to attain something which looms up beyond the immediate present. Only have the course long enough to have the scholars remain in the school until they are really prepared to leave. As it is now, scholars attend spasmodically, often with the feeling that school is a good enough place to put in time when there is nothing else of interest on hand; and thus they go at intervals, until they drift out, as getting too old to attend any more, without regard to whether they are prepared to leave. The course of study marked out by the old State Board of Education is a good one in the main, and your county superintendent will furnish you with diplomas of graduation for all who complete the studies of the advanced grade therein outlined. In the writer's humble opinion, this may do much to raise many schools out of the educational ruts, in which they have almost come to a standstill.

To sum up, then, the further increase of educational groove-runners may be lessened by the exchange of ideas. This may be accomplished in three ways: by the Institute, which, however, comes but once a year; by visiting other teachers' schools, and studying their methods when the occasional opportunity offers; and by improving the opportunity, which is always open, of studying professional literature as delineated by such authors as Page, and as set forth in the leaves of our educational journals.

WE must bear in mind, that the ultimate end of education is not a perfection in the accomplishments of the school, but fitness for life; not the acquirement of habits of blind obedience and of prescribed diligence, but a preparation for independent action. We must bear in mind, that whatever class of society a pupil may belong to, whatever calling he may be intended for, there are certain faculties in human nature common to all, which constitute the stock of the fundamental energies of man.—*Pestalozzi*.

EDITORIAL DEPARTMENT.

ON CLOSING OUR FIFTH VOLUME.

IT is only when we write "End of Volume V." that we realize how quickly the years have flown. Five years are ended, and on our shelves stand the records of their many months.

When we compare each successive volume with its predecessors, we see progress evident to even the most careless eye. We see presented a clear view of the position and progress of education during five eventful years.

We believe that California, since 1875, has been in an essentially transition period. There have been, and still are, those constant shiftings, changes, and convulsions, which betoken in the physical world that matter is seeking its most stable equilibrium, that the center of gravity is not yet fully and safely within the base. Old California customs and habits and traditions are slowly breaking up; but the more conservative, more approved ways of the older world are yet not quite established in their stead.

The volumes of the JOURNAL already published show that in education, too, this shifting and balancing process has been taking place. It may be observed, that out of evil, good has come; that, despite errors and imperfections even in our fundamental law, the training acquired in the formation of a new society, has served to bridge over abrupt declivities, or to modify radical alterations.

A pertinent question at this time is, what has the JOURNAL done during its career to merit the support of all truly interested in the proper instruction of our youth?

The JOURNAL has brought the teachers of the Coast into closer personal and professional relations with one another; it has materially influenced the formation of a professional spirit; it has aided in raising the standard for admission to the ranks of the profession; it has pointed out abuses of power in high places; and, regardless of consequences, has denounced and condemned incompetency wherever found; it has kept its readers informed of the great educational movements of the day; it has advocated reforms in our own State, so as to keep well abreast with the developments of our system in the older communities; it has been directly instrumental in the reorganization of the State Association of Teachers; and its reports of local Institutes have encouraged and incited teachers to emulation and improvement; it has made known the best teachers of the Coast, thereby, not only benefiting them, but the responsible positions to which they have been called.

We say these things in no vain spirit; they are tinged with no drop of egotism. We ask ourselves, would education have been as well advanced, would teachers be as intelligent (though we are still far from perfection in either particular), if there had been no JOURNAL?

It is believed that, on comparison, Volume V. will be found superior to any of its predecessors. It is expected that Volume VI. will show a further advance. Many improvements have been considered and arranged for. Those writers who have lent interest to our present volume will continue their contributions during the coming year. Articles are already on hand from W. W. Anderson, Charles M. Drake, Rev. S. V. Blakeslee, J. W. Redway, Mrs. Kate B. Fisher, Mrs.

Aurelia Griffith, Miss Emma Marwedel, Miss L. T. Fowler; and among those who will contribute to early issues are E. R. Sill, Joseph Leggett, A. W. Oliver, John Swett, Volney Rattan, C. B. Towle, A. L. Mann, Mrs. Aurelia Griffith, and many others.

PRISON REFORM.

A CONVENTION of representative men was recently held in this city, whose sessions were devoted to the consideration of needed reforms in the prison management of the State.

The discussions brought out forcibly that the condition of the felon (in California, at least) is far preferable to that of the pauper. At our penitentiary there is no segregation of convicts, no constant hard labor; the inmates have access to the daily papers, have frequent communication with the outside world; are comfortably housed, well fed, and need take no care for the morrow.

It is no wonder that one prison was found insufficient to hold all the State's boarders, and that the accommodations had to be doubled by the erection of a branch at Folsom.

There were many excellent papers read at this meeting, and many wise suggestions made, all tending to show how criminals should be punished, how crime diminished. One paper, much out of the ordinary groove, in fact, an extraordinary production, was read by Dr. W. H. Platt, an Episcopal clergymen of the city. Dr. Platt made two remarkable points—the more astounding as coming from a Christian minister. The first was that society (in which term he must have included good church-people) does not permit a criminal to reform; second, that the moral weakness which leads men to crime would forever prevent a complete reformation. His remedy, then, as we understand it, is to set apart or confine these moral lepers, so that by no contact may contagion breed pestilence. If a man fall, let him lie; if he be wounded, pass by on the other side. Did not the Levite do so, of old?

For a priest of the new dispensation, this seems strange doctrine. The *lex talionis*, the eye for eye and tooth for tooth precept, appears but barely hidden under the mantle of charity and "judge not lest ye be judged." Such language might become him who sacrificed to Moloch: certainly not a follower of him who comforted Mary Magdalen.

All these discussions and papers on crimes and their punishments have only deepened our conviction that man in all his laws and methods, in his penalties and reforms, must follow Nature's rules. Every crime, short of capital offenses, should be made to expiate itself, *i. e.*, the criminal should be detained in durance and at labor until, by his exertions, he reimburses the individual whom he has wronged, and society on which he has laid the burden of his trial and conviction and maintenance in confinement.

All crimes against property could readily be punished in this way; under such a system, there would be a material decrease in the number of "second terms" or "third terms"; crime itself would become rarer, for a prison would no longer be a place for rest, for life without care, for enjoyment without cost.

Such a system may be hard, but it is strictly just. It tends, too, to elevate the criminal, who, having by honest labor reimbursed society for what he has un-

lawfully taken, feels by hard-earned experience, that a *quid pro quo* has been exacted, and that he may begin the world again, at least without debt to society.

For crimes against the person, this plan is not altogether inapplicable. Where the penalty is not death, long terms of imprisonment might prove effective. And finally, no one in our day doubts, that, with the spread of knowledge, greater refinement, and a wider, more generous culture, this class of crimes tend naturally to diminish.

EDUCATIONAL PROGRESS UNDER THE NEW CONSTITUTION.

FROM the reports of the country superintendents, from the accounts of the State Superintendent, and from our own observations, we are led to the conclusion that this has been a year of more than common activity in the school work of California. Progress in some sections has been so marked that Supt. Campbell's comments to that effect caused a *San Francisco Chronicle* of recent date to claim that gentleman as a convert to the new Constitution. Be this as it may, we are satisfied that much of what has been done, under that instrument, is by wise, conservative legislation and thorough State supervision.

Those who know Mr. Campbell intimately will join us in naming him an optimist. He is apt to see first and clearest the bright side of every situation. To the State School Law and the Revision, which owe their existence to his persistent watchfulness, energy, and judgment, and to his constant consultations with the superintendents of our cities and counties, may justly be ascribed the encouraging condition of our affairs. It has been noted, by many teachers who have called our attention to the fact, that since the administration of John Swett, no State superintendent has been brought into such close relations with the teachers and school officers as Mr. Campbell. His name has appeared in local papers as talking to teachers at Institutes, or lecturing to communities at evening meetings, more frequently than that of any of his predecessors, with the one solitary exception named. In fact, to his influence, and to that of Principal Charles H. Allen of the Normal School, may be credited much of the activity which now pervades the State.

Two provisions in the law which will always stamp Mr. Campbell's administration as highly conducive to the advancement of popular education, are the sections providing for biennial meetings of the county superintendents, and the basing of State appropriations on daily attendance. The latter provision alone has already made a perceptible increase in the school attendance of the State. One result has been peculiar: the number of census children has largely fallen off, some two thousand in two years, while the daily attendance has increased in quite as large a proportion.

We believe the workings of the educational articles of the new Constitution have shown that the old system was cheaper to parents, in regard to the cost of text-books; more remunerative to teachers, in relation to their salaries; and more in accordance with educational progress, as tending to foster the creation and conservation of a profession of teaching. On the other hand, some of the innovations, such as county boards of education, tenure of county superintendents, etc., are certainly working to advantage.

ON THE PROPOSED METHODS FOR REFORM- ING ENGLISH SPELLING.

IN this issue of the JOURNAL is an article on Spelling Reform by the eminent American educator, J. Russell Webb, who will have the fervent gratitude of undying generations, as the mighty spirit who has exorcised those six and twenty cruel demons, which childhood execrates as the A B C's.

Prof. Webb's system differs in many respects from that authorized or countenanced by the American Philological Association, and used in the successive issues of the *Phonetic Teacher*.

While we are in hearty accord with the objects of the spelling reform, we cannot indorse either the whole of Prof. Webb's scheme, nor yet that of the Philological Association. Both are open to serious objections. Both advocate reform in the interest (among other objects) of economy. Yet both multiply letters unnecessarily. One end of the reform—indeed, its primary aim—is to shorten the period of the child's apprenticeship in the elementary reading book. Some of the new letters, as every teacher will instantly see, are so calculated to confuse the eye by their close resemblance to others, that they will lengthen the time of probation.

Of course, we recognize the fact that it is easier to find flaws in a system, than to propose a better. We are not prepared to suggest a new alphabet, or to add to the already too cumbrous mass of rules from which the reform association must evolve some logical system. But we believe that any reform, to be effective, must be based on these principles: First and foremost, every sound in the English language must have its exclusive representative character. Second, the new letters must not resemble the old so closely as to cause doubt or confusion. (Our teachers know how difficult it is for the child to distinguish *d* from *b*, *g* from *q*, *m* from *n*, etc.) Third, reject from the alphabet all unnecessary letters, such as *c*, *y*, etc.; but keep the characters to represent some other sound; this will obviate the necessity for inventing so many new signs.

If these suggestions are impracticable, why not use the diacritical marks, and always substitute the simple letter for the combinations which represent it; thus, *ā* for *eiġh*, *ay*, *ai*, *ei*, etc., etc.

We believe, if the reform begins and ends with these things accomplished in the next three generations, it will do more than appears probable at the present rate of progress.

MEETING OF THE STATE ASSOCIATION OF TEACHERS.

THE fifteenth annual meeting of the State Association will be held in this city during the week between Christmas and New-Year's. The exact time and place are announced in our advertising columns.

It is anticipated that the largest meeting ever held in California will convene at that time. The president of the year is James Denman of San Francisco. The president's annual address will be on "The Work of Graded Schools—What It

Should be." Among those who have prepared addresses are State Supt. Campbell, Supts. J. M. Guinn of Los Angeles, and Jesse Wood of Butte. Addresses may also be expected from Prof. George Davidson, Prof. Charles H. Allen, President W. T. Reid, Dr. J. H. Wythe, Miss Kate D. Smith, and others.

We understand that a meeting of the city teachers will be called at the same time and place, and that some of the funds available for the city Institute will be used to add interest and value to the State meeting. Arrangements for reduced rates will undoubtedly be made with the railroad and steamship companies, of which due notice will be given through the daily press.

BUSINESS MATTERS.

BY promptly renewing their subscriptions at this time, our subscribers will save considerable delay and trouble in transferring accounts and opening new books. We hope the year 1882 will witness a large increase in our list, and that many of those old subscribers, who, by reason of the State subscription, have "dropped" the JOURNAL, may again become its regular subscribers. As stated some time ago, to be successful, the JOURNAL must have the united support of the teachers of the State. Our last volume and the current one are conclusive proof that the State appropriation has been used to improve our periodical.

There has been a large falling off in individual subscriptions, consequently the results for the year show but little profit. We trust our teachers will consider this matter, and show themselves public-spirited and progressive. After all, it is directly and most to their interest to have a strong educational journal published on this Coast. So with the end of this year, we trust that renewals will be prompt, and new subscriptions many. If principals and superintendents will exert themselves to present the matter to their assistants, they will aid in what we mean to have in 1882, a grand JOURNAL "boom."

The name of our periodical hereafter, as already stated, will be THE PACIFIC SCHOOL JOURNAL. The business office and editorial rooms are still located at 838 Market Street. Superintendents and teachers, in sending postal orders and checks, will please bear this in mind.

GENERAL EATON'S VISIT TO THE PACIFIC COAST.

IN the November JOURNAL mention was made of Gen. Eaton's arrival in this city, and his departure for Oregon and Washington Territory. We learn that his trip North was eminently satisfactory. The principal cities and towns of the extreme north-west were visited, and addresses made to appreciative audiences.

Since his return to California, he has visited the schools of this city, the State University, Miss Marwedel's Kindergarten School, the State Normal

School, and many other educational institutions. On the 10th ultimo, he addressed the teachers of this city—more than seven hundred in number. On the 15th a reception was given him at the residence of City Supt. Taylor. More than one hundred of the leading educators of the city assembled to greet him. The occasion was highly enjoyable, and those present, and also those who heard Gen. Eaton's able and instructive address on the 10th, will long bear his visit in kind and grateful remembrance. On the 17th he departed for the East, going by the Southern route, thus "taking in" Southern California.

In an interview with a representative of the San Francisco *Evening Bulletin*, Gen. Eaton spoke at considerable length in regard to school matters in the city. His observations, in many respects, tend to confirm views expressed in the JOURNAL as long as two years ago, when the present board of education undertook to "reform the department," and succeeded in getting it into a state from which it has not yet emerged. He said that his observation had led him to believe that, generally speaking, our boards of education had been a serious stumbling-block in the path of progress. Nothing was more needful to insure a good school system than enlightened and disinterested administration. Such administration required, on the part of members of the board, thorough acquaintance with educational subjects, and a profound purpose to unite solely for the best interests of the department. That purpose, he feared, had not always been the moving spirit in our school boards. He could not avoid the inference, from the scrambles that frequently occurred for positions on the board, that personal motives had much to do with professed zeal for the public service. With such motives permeating the whole system, cropping out in the removals and appointments of teachers, and in the conduct of the financial affairs of the department, the best results could not be expected. Nor was he impressed with the idea that, aside from the question of motives, the best timber had always been selected by the board. The Jeffersonian test included capability as well as honesty. The confidence with which some men assumed the guidance of educational affairs would be amusing, were it not suggestive of disaster.

The remedy for this trouble was obvious, and rested with the community in choosing for members of the board of education men whose characters were guaranties of their honesty and capability.

Another point on which the General laid considerable stress was the disposition shown by large tax-payers to rebel against the imposition of heavy taxes for school purposes. In this he thought they exhibited a lack of foresight even from their own standpoint of financial expediency.

In regard to teachers' salaries, he said that he found here a cosmopolitan population, more varied in its ingredients than existed in any other city in the United States. This in itself was an argument in favor of a school system so complete and far-reaching as to gather in all these heterogeneous elements, and combine them into the material of which intelligent American citizens must be made. Any change should be in the direction of increased rather than decreased effort and expenditure. Taking into consideration all the circumstances, he did not consider that San Francisco was paying an excessive price for the maintenance of its schools. True, the cost *pro rata* of the attendance was higher than in most of the larger Eastern cities, but the same rule applied to other branches of business. Salaries and expenses were generally higher here. The habits of the people were less economical. Something might be gained by a more rigid system of accountability applied to the officials having under their control the administration of the school department. Excrescences might be lopped off, abuses corrected, leaks

stopped. But in the main item of teachers' salaries, he considered economy was sufficiently consulted. He had found the teachers, as a rule, capable and intelligent, and to maintain that standard it was necessary to make it an object for competent men and women to give their time and energy to the work of instruction. The position of a teacher demand education, intelligence, tact, experience, and other high mental and moral qualities, and it would be unwise to risk the retention of such qualities by a parsimonious policy in the matter of salaries.

He expressed himself highly pleased with all the schools of the Coast, and with the appearance and bearing of their teachers.

Gen. Eaton is so thoroughly conversant with the educational condition of all the countries of the globe, that a word of commendation from him is encouraging, and his advice and suggestion of the highest value. We trust our teachers will lay to heart all he has said, and that, at no distant day, it may bear abundant fruit.

SILK CULTURE.

THE editor of the JOURNAL has been requested to state that the California Silk Culture Association will furnish, on application, mulberry slips, or seeds, and silk-worm eggs to all who may be disposed to aid in the introduction of silk culture on the Coast.

Teachers who have permanent homes in the central and southern portions of the State can help to start this magnificent industry. The climate and soil are suitable. The work of feeding the worms is simple, and requires but little time. The school children—girls particularly—will take interest in it, without urging. The market in California for cocoons is already much greater than the home supply, and large quantities are annually imported. In France much of the labor of feeding the worms and getting the cocoons ready for spinning, is performed by aged women and young children, who earn in this way an adequate sustenance.

Teachers and others, who have for years talked in advocacy of practical education, will find here a legitimate field for their exertions.

Miss Emma Marwedel, the Kindergartener, is head of the committee for the distribution of seeds and eggs. By addressing her, care of this office, all inquiries will be answered, and packages sent.

WORTHY ATTENTION.

THE attention of trustees and teachers is called to the many new advertisements in this number of the JOURNAL. Inquiries frequently made at Institutes and elsewhere in regard to school text-books, library books, periodicals for the young, and apparatus, will be found fully answered in these advertisements.

In fact, we believe it undeniable that the advertising pages of an educational journal are among its most interesting contents. They are rarely read and appre-

ciated according to their merits. Yet in these pages are found the first announcements of the new books of the day, the presentation of the claims of the best school furniture, the latest apparatus—in a word, all the paraphernalia of education.

With the opening of Volume VI. we intend to publish in each number an index of its advertisements, and we believe our readers will find this worth reading every time. In the meanwhile, the new advertisements of A. S. Barnes & Co., G. & C. Merriam, the Russell Publishing Company, Boston (of that unexcelled magazine, *Our Little Ones*); as well as our old advertisers, Bancroft, Van Antwerp, Bragg & Co., Lippincott, Gilbert & Moore, those cabalistic letters I. B. T. & Co., Fuller, Payot & Upham, and the rest—all these are worth taking another peep at, to see if, perchance, amid many changes, there is not something new.

OFFICIAL DEPARTMENT.

SUPERINTENDENT FREDERICK M. CAMPBELL, EDITOR.

SANTA CRUZ COUNTY.

W. H. HOBBS, Superintendent.

The schools of this county were never in a more prosperous condition than at the present time. The change in their management required by the new Constitution has proved beneficial, although the Legislature has so far failed to carry out some of its provisions in regard to schools matters.

The Constitution provides for primary and grammar schools, also high schools, evening schools, normal schools, and technical schools; but the Legislature has made provision for the support of only primary and grammar schools. Some law should be enacted whereby cities and towns having no board of education, and large districts, can legally support such high schools as the people desire to maintain.*

Some means should be devised for the formation of joint school districts.

SIERRA COUNTY.

J. S. WIXSON, Superintendent.

The schools of Sierra County, generally being supplied with good teachers and trustees, are in a flourishing condition, and speak well for the future of the county. I say "generally," because we have some poor teachers and two or three sets of trustees that seem to think that the schools of their districts were created for their especial pecuniary gain. With those exceptions, the trustees are as careful of the school fund as if it came from the districts by direct tax.

I cannot but regret the change made by the new Constitution in the manner of disposing of the poll taxes. It would be greatly to the advantage of the school fund of this county if the poll tax collected here could, as heretofore, go into our county school fund.

*Section 6 of art. ix of the Constitution gives to districts the power to establish these schools, simply prohibiting the use of *State* school moneys for that purpose. The section is as follows:

"ARTICLE IX. EDUCATION.—Sec. 6. The public school system shall include primary and grammar schools, and such high schools, evening schools, normal schools, and technical schools, as may be established by the Legislature, or by municipal or *district* authority; but the entire revenue derived from the State school fund, and the State school tax, shall be applied exclusively to the primary and grammar schools."

—F. M. C.

SISKIYOU COUNTY.

H. A. MORSE, Superintendent.

Hamburg district has been, by petition to the board of supervisors, united with Hawkinsville district under the name of Hawkinsville district.

Quartz Valley district did not succeed in getting the school-house (burned last year) rebuilt in time to have the full term of six months taught this year, which accounts for that district having but three and a half months' school.

The financial report is not as satisfactory this year as I desire. While the amount received from county taxes amounts to over \$8,000, only \$6,000, or something over, has been apportioned to the several districts. This is accounted for by a mistake made by the county treasurer last year, by which I apportioned in June nearly \$2,000 too much, which, of course, must be reserved out of this year's funds. While the districts do not suffer by the error, it appears bad in the financial account.

SOLANO COUNTY.

ALBERT W. SUTPHEN, Superintendent.

The public schools of this county are making good progress. We have many excellent teachers residing in this county, and with their long and successful experience and enterprise, are giving tone to the profession.

The "Manual of Instruction" from our county board of education is now in the hands of every teacher and school officer in the county, and everything pertaining to school matters here shows progress.

SONOMA COUNTY.

C. S. SMYTHE, Superintendent.

The schools of this county are in a prosperous condition, and particularly so financially. Five new school-houses have been erected and two new districts joined. Some dissatisfaction has been expressed in reference to operations of sec. 1621 as amended. This is owing to the fact that many districts did not have time to comply with the provisions of this section after March 4th, 1881. Another year this will be entirely satisfactory.

The method of drawing money from the treasury is not satisfactory to anybody.

I would suggest an amendment to the school law, requiring that when a board of trustees fixes a teacher's salary that it remain at that figure for the school year. This will cure two evils: It will prevent reductions by boards wishing to get rid of a teacher and lacking the courage to discharge him. It will also prevent trustees from raising teachers' salaries to unreasonable figures for the sake of using the entire school fund, having at the same time a private understanding with the teacher, that he is to make a liberal donation to the district for the purpose of buying furniture or repairing school-houses.

The school law is in the main very satisfactory.

TRINITY COUNTY.

GEORGE E. NOONAN, Superintendent.

The schools are in a good working condition, and we have an excellent corps of teachers. The only drawback is a lack of funds to keep them at their labors eight or ten months in the year. There are but five or six districts in the county which receive sufficient State and county money to pay the expenses of an eight months' school.

Instead of six, a ten month's school is as necessary for the children in our mountain districts as in any other part of the State, and I hope the necessary steps will be taken at the meeting of our next Legislature to insure us more money and a better equalization of the school fund (poll tax) than at present. The transferring from our county school fund of the poll tax into the State fund was a severe loss to the poor mountain counties. By the old Constitution our schools received all collected; but now our *pro rata* is small and insignificant, thereby increasing our high and burdensome taxes.

SUTTER COUNTY.

M. C. CLARK, Superintendent.

The schools in Sutter County, as a whole, are in a fair condition. In this school year there has been more or less difficulty in maintaining a continued term of school by reason of the flooded condition of the county during a part of last winter. Notwithstanding this impediment, ten schools have maintained a term of eight months; twelve, seven months, and none less than six.

I think we have school law enough.

TEHAMA COUNTY.

MYRON YAGER, Superintendent.

We have had two school-houses burned during the school year; viz., Freeman, and Payne's Creek. There has been paid into the treasury, to the credit of Payne's Creek district, \$386.50, insurance money on said houses.

We have five school districts which have built each a new school-house, principally by subscription; viz., Brickyard, Farquhar, Long's, Shultz's, and Tuscan Springs.

We have three school districts which have no houses; viz., Dry Creek, Happy Valley, and Marion, schools having been maintained during the past year in buildings rented for the purpose.

TULARE COUNTY.

W. J. ELLIS, Superintendent.

In so short a space we cannot enter into the detail of each district, but will endeavor to give the following notes as best we can from facts which have been carefully collected by myself and deputies while visiting the different districts in our county.

We cannot but boast of a fine corps of teachers, who have endeavored to do their duty to themselves and to the pupils placed under their charge. The schools in our county have made rapid progress in the past year, and we think that the coming year will be marked by far greater progress. Our trustees are alive, and secure only teachers of high standing in the profession, and give preference to our home teachers who live among us.

In the accompanying financial and statistical tables we have endeavored to give the true standing of each district. As in years before, we must report some of our districts rather poorly fixed to accommodate our pupils and teachers, but truly hope to be able to report them highly improved by the time this school year closes.

Owing to the extremes of the cold wet winter, and the dry hot days of summer, our average attendance is not so good as we could wish; still we claim credit for our pupils, as many of them who reside in the mountainous districts are compelled to travel long distances to be able to attend school at all.

In conclusion, we will add, that we have eighty-two school districts in our county, three of which have been created during the present year. Two of these eighty-two districts are dormant at date. Plain and Outside school districts have been consolidated for school purposes, so also have Visalia and Visalia City. The two latter districts employ seven teachers—six white and one colored—and maintain a graded school.

TUOLUMNE COUNTY.

JOHN T. MURNAN, Superintendent.

The schools of this county are in fine condition. Nine-tenths of our teachers are under thirty years of age; are Californian born and bred; are well up in the matters pertaining to educational reform, and are painstaking and energetic.

VENTURA COUNTY.

D. D. DeNURE, Superintendent.

I can truthfully say that our schools have progressed as well, if not better, during the past year than during any previous year in the history of our county. Year by year we are securing better talent, and, as a consequence, are producing better results. There is one tendency, however, which is inauspicious, and which does not augur well for the continuance of our best teachers in the educational field, a tendency, I doubt not, that is shared in by nearly all the counties in the State; viz., a chronic desire on the part of some people—principally the uneducated class—to reduce teachers' salaries. The cheapest teacher (in dollars and cents), regardless of qualifications or experience, seems to be their one aim and desire.

I am quite well pleased with our school law as it now is. The new method of apportioning school money, it seems to me, is the fairest and best that we have yet had. Now that the surplus is to be apportioned on the average daily attendance, I would suggest that teachers be required to swear to their school reports, the same as all other public officers are required to do. We do not accept a census marshal's report without the oath or affirmation; why should we that of a teacher?

YOLO COUNTY.

JOHN W. GOIN, Superintendent.

The schools in the county are generally taught by thoroughly competent and efficient teachers. Nearly all the districts in the county are managed by trustees who take interest in the schools; yet there are some exceptions. During the school year ending June 30th, 1881, four new districts were formed. Four districts voted and collected taxes to build new school-houses. Three new school-houses were built, and one is in course of construction at this time. The schools throughout the county may be said to be in a prosperous condition. The law does not, however, furnish sufficient compensation to the superintendent to justify as thorough supervision of the schools as the importance of the work demands.

I would suggest that the school law be so amended as to dispense with the necessity of drawing requisitions upon the auditor, because it imposes a great deal of unnecessary work upon the auditor, and is no check upon either the superintendent or the treasurer. I would suggest that the law be so amended, that districts lying in two adjoining counties may be consolidated by concurrent action of the boards of supervisors of such counties. The present law empowers the county board of education to adopt a list of library books. The law should clearly limit the trustees in the expenditure of the library fund to the list so adopted.

YUBA COUNTY.

T. H. STEEL, Superintendent.

From the damage to the valley lands occasioned by hydraulic mining, and the discontinuance of that mode of mining by injunctions, the schools of this county, with all other interests, have suffered.

The prospects for improvement and efficiency in our schools are not reassuring. The floods in the valleys and the snows in the mountains make it necessary to hold school in several districts during the hottest and most unhealthy part of the year, which is neither favorable to the health nor progress of the schools so situated.

The depreciation of the value of lands and mines has been so great, and the future of these interests so uncertain, that some have and many are anxious to sell out and leave, thus reducing the tax and the census roll to an extent that, if there is no solution found for these difficulties, Yuba county must soon rank very low in wealth and population.

SCIENCE RECORD.

THIS RECORD is under the editorial charge of Prof. J. B. McCHESNEY, to whom all communications in reference thereto must be addressed.

THE PLANETS IN DECEMBER.—*Mercury* is a morning star, rising on the 7th, at 5:33 A. M.; on the 17th at 6:16 A. M.; and on the 27th at 7 A. M. On the last day of the year the sun and planet rise together. He is near the moon on the 20th, and at his greatest distance from the sun on the 26th. *Venus* is a morning star, raising on the 7th at 5:22 A. M.; on the 17th at 5:50 A. M.; and on the 27th at 6:15 A. M. She is near the sun on the 20th. *Mars* rises on the 7th at 4:25 P. M.; on the 17th at 3:30 P. M. He is near the moon on the 8th, and in opposition to the sun on the 27th. *Jupiter* sets on the 7th at 6:10 A. M.; on the 17th at 5:34 A. M.; and on the 27th at 4:53 A. M. He is near the moon on the 3rd, and again on the 30th. *Saturn* sets on the 7th at 5:14 A. M.; on the 17th at 4:26 A. M.; and on the 27th at 3:44 A. M. He is due south on the 1st, and near the moon on both the 2nd and 30th.

CATHARINE C. HOPLEY suggests in *Land and Water* a new theory of the so-called fascination of birds by snakes. It is that the bird mistakes the snake's tongue, which the animal keeps in constant motion, while it otherwise remains perfectly still, for a lively worm, and gazes at it with the expectation of making food of it. The idea was suggested by observations at the Zoological Gardens, where the birds were frequently seen watching the tongues of the snakes.

M. E. BOUCHAT has suggested the use of the digestive juice, papaine, for the dissolution and digestion of the false membrane of diphtheria. In his experiments, he has seen a thick, resisting, and false membrane from the trachea, which he had placed in a tube with one-third part of the juice of the papaya, dissolved in a few hours when cold, and in a few minutes when the tube was warmed. Since beginning his studies on this subject, he has treated thirty-two cases, two of which were very severe, and lost only four.

A PARIS paper thinks that broom-corn is likely at no distant day to revolutionize the breadstuff supply of the world; and it reports the discovery of a process by which the finest and most delicious flour can be made from the seed to the extent of one-half its weight, and leave the other half a valuable food for making beef and milk. The average yield per acre is 300 bushels, and in many instances 500 bushels, or 30,000 pounds have been secured. Nor does it exhaust the soil as Indian corn, from the fact that it feeds from the deeper soil, and assimilates its food from a cruder state. It belongs to the same genus as the sweet cane, commonly known as sorghum.

THE outside fiber of the cocoanut is a splendid substitute for leather, and is used for forming shoe-heels. After mixing with some cementing liquid, it is then stamped into form under a heavy pressure.

DAVID GILL, the Astronomer Royal at the Cape of Good Hope, has published his calculation of the solar parallax made for observations of the planet Mars, in the Island of Ascension, in 1877. He makes the parallax 8.78, which will give as the mean distance of the earth from the sun 93,080,000 miles.

A HULL, England, newspaper reports that, after a month's trial of the Brush electric lights at Scarborough Spa, the directors resolved to go back to gas, and ordered the removal of the electric lighting apparatus.

SEVERAL years ago Ericsson predicted that the Nile and the Ganges would be lined with cotton and other factories driven by solar heat. A French engineer in Algiers is

already contributing to the fulfillment of this prediction by pumping water and making it boil by solar force alone.

A FIRE BALL was seen to fall at Springfield, Ill., about ten o'clock on the night of September 21st. It resembled in appearance an electric light, and it fell with a rushing sound, like that of a sky-rocket. The dry grass was set on fire where it struck, and the grass burned to a wooden sidewalk connecting with fences and wooden buildings, before the fire could be extinguished with water.

RECENTLY, while the machanical section of the British Association were discussing the means of using electric light in coal mines, Mr. Swan, inventor of the "Swan lamp," made a remarkable statement. He produced an electric lamp of two-candle power, quite detached from any wire, and portable, which could be kept lighted for six hours by a two-cell Faure secondary battery. The weight of the battery would not exceed ten pounds, and to charge it afresh, it would only be necessary "to place it for a time in connection with the wires of a dynamo near the pit's mouth." The battery and lamp need never leave the pit. Sir J. Hawkshaw greatly approved this lamp, and well he might. The germ of a portable and handy electric lamp, unconnected with any wire, and fed at intervals only, as an oil lamp is, must lie in that rude specimen shown.

WHOOPIING-COUGH.—On an extended trial the author, Dr. Jasper Griswold of this city finds *carbolic acid in whooping-cough*, in doses of one-fourth minim to a child of six months, one-half minim to a child of a year, and one minim for one of two years and upward, to be the best remedy. "The whoop goes; the vomiting ceases; the paroxysms are modified in intensity and frequency." This result he believes to "arise from a similar action to that of creosote on the motor fibers of the vagus to the stomach, and from a lowering of the vitality of the specific germ of whooping-cough disease."

TO REMOVE INK STAINS.—The *Journal de Pharmacie d'Anvers* recommends pyrophosphate of soda for the removal ink stains. This salt does not injure vegetable fiber and yields colorless compounds with the ferric oxide of the ink. It is best to first apply tallow to the ink spot, then wash in a solution of pyrophosphate until both tallow and ink have disappeared.

Stains of red aniline ink may be removed by moistening the spot with strong alcohol acidulated with nitric acid. Unless the stain is produced by eosine, it disappears without difficulty. Paper is hardly affected by the process; still it is always advisable to make a blank experiment first.

TEACHERS' INSTITUTES.

ALAMEDA COUNTY.

This county ranks second in the State in point of population and wealth. Under the administration of Supt. W. F. B. Lynch and his successor, J. C. Gilson, whom we have had such frequent occasion to commend during the past four years, the schools of the county are unexcelled anywhere on this Coast. The Institute, which was convened by Mr. Gilson during the latter part of October, was distinguished by just such practical exercises, able and carefully prepared addresses, as might be expected from the culture and ability of his corps of teachers.

Mr. J. T. McDonald of Livermore was elected Secretary, and Miss A. P. Meek of Oakland, Assistant Secretary. The following committees were appointed: On Social Reunion, Miss A. F. Aldrich, Oakland; Mrs. E. Hinckley of Oakland; Miss Jennie Burge,

Alameda; Miss Lou Cearley, Washington Corners. On Resolutions, J. B. McChesney, Oakland; E. L. Knowlton, Alameda, W. F. B. Lynch, Centerville.

Supt. Gilson, in his opening address (a very able production, by the way) took up the subject of Morals and Manners. Our space will permit only the following very brief extract from the body of his address:

"Education in its broadest sense not only makes us more useful to ourselves, to society, to the community, and to the State, but enlarges our happiness by giving us greater resources for pleasure.

"True education does not consist in merely developing the mental faculties to their highest extent, it reaches the emotional nature, enlarges sympathy, generosity, honesty, and self-denial, and fosters fidelity, courage, punctuality; in short, it brings out and stimulates the better and worthier characteristics which go to make up a beautiful life.

"Now, how to accomplish these desirable objects. No definite stereotyped method of procedure can be given, since the conditions and circumstances are so different.

"The first requisite is, that your own example, in both manners and morals, be one worthy to be patterned after by your pupils. Let the intercourse between yourself and your pupils be always of a courteous and kindly nature.

"Insist on having pupils use at all times while in school, or on the school grounds, pure language and courteous expressions. Be ever on the alert to embrace an opportunity to impart a lesson on morals or manners.

"It is a good plan to read occasionally a selection from some book or paper descriptive of a deed of heroism, a case of self-denial, or an act of honesty, and to supplement the reading with appropriate remarks. In order to be effective, the teacher's remarks should be given in a frank, firm, generous manner, free from sickly sentimentality, though not devoid of such feelings as may have been called forth by the character of the piece. Mottoes, printed or written conspicuously upon the blackboard, and commented on by the teacher, are occasionally favorably impressed on the minds of the pupils."

At the conclusion of the address, the subjects touched upon by the speaker were thrown open to the Institute. Mr. D. S. Fowler, of the Prescott school, first spoke upon the theme touching the question of specified time in giving instruction. He was followed by Josiah Keep of the Alameda High School, who touched upon the relation between pupil and teacher, and the sympathy which should exist. Miss E. A. Pierce, of Sunol, concluded with an able address on the sense of duty to be made a prominent feature in the character and action of a child. Mr. P. A. Garin delivered a lively address on the subject of Drawing, which was illustrated by some bright exposition on the blackboard. The matter was discussed, and some severe, and at the same time, terse opinions given. Supt. Todd followed with an able and well-prepared dissertation on Reading, which evolved a spirited discussion on the subject, which was very interesting. A number of teachers expressed their views, and gave the result of their experience in teaching. Mr. T. O. Crawford, of the Lincoln School in this city, took up the topic of the hour in an able and carefully prepared essay on Spelling Reform, which was illustrated by diagrams. After a short recess, the children rendered a pleasant song, and an address was delivered by J. W. McClymonds, principal of the the San Leandro schools, on the subject of Physiology, giving his own peculiar methods of teaching this important branch of human knowledge.

On the second day, the Institute, in a body, spent the day at the State University, Berkeley, where they listened to lectures by some of the professors.

On the third day, the first matter presented for consideration was the School Cabinet by County Supt. J. C. Gilson, which was very interesting. Cabinets were placed on exhibition, and their use explained. The various animal, mineral, and vegetable substances were discussed, and the importance of the movement forcibly urged. He was followed by J. P. Garlick of Oakland, on the Dictionary and Its Use, in which he argued upon the importance of more familiarity with the dictionary and exact pronunciation. It was a well-

arranged and thoughtful paper. Mr. Josiah Keep, of Alameda, gave an able essay upon the subject of Science in the Common Schools, which is worthy of a more extended notice. The last address of the morning was well written, bright, terse, and to the point, from J. T. McDonald, of Livermore, on Word Analysis, which was exhaustive in its scope and thorough in its analysis.

In the afternoon meeting, a paper on Composition by Mrs. K. B. Fisher, was a carefully written and well-delivered effort. W. W. Anderson followed in a very important and forcible paper on United States History, which displayed evidence of careful preparation. After a lively and spirited discussion, the reports of the committees were received, and the Institute adjourned.

The evening sessions were occupied, on Wednesday, by Dr. J. H. Wythe, on the Microscope in the schools, Thursday by State Supt. Campbell, on Hindrances to a Satisfactory System of Education, and Friday to a social reunion.

On the whole, this session will compare favorably with any of its predecessors.

LASSEN COUNTY.

The teachers of Lassen County met, pursuant to a call by the county superintendent, at Susanville High School building, Wednesday, Sept. 28th, for the session of 1881. Supt. W. R. Schooler presided. Rev. Mr. Kirkbride opened the Institute with prayer, then followed with a few well-timed remarks. The following officers were then elected: Vice Presidents, Mrs. M. E. Hurley, Mr. J. W. Johnson, Mr. Eugene Williams, Mr. R. L. Davis, Mr. A. T. Stanley; Emma L. Hurlbret, Secretary; A. W. Fairfield, Assistant Secretary.

The first on the programme being music, the *Murmuring Sea* was sung by the Institute choir. Mr. J. W. Johnson then gave a blackboard illustration of his method of teaching Penmanship from the Payson, Dutton & Scribner series. An animated discussion then followed, in which Mr. Williams, Miss Ford, Mrs. Cromwell, and Miss Estill took part. Gen. Allen Wood, Mrs. Williams of Susanville, and Miss Smith of Sacramento were elected honorary members of the Institute. The next on the programme was Primary Reading by R. L. Davis, who came forward and made a few remarks upon this subject.

On Thursday, the opening exercise consisted in singing the hymn *Let the Lower Light be Burning*.

On motion of J. W. Johnson, Dr. Z. N. Spalding was made an honorary member of this Institute. History was then taken up. Mr. Stanley introduced the subject, and gave his method of teaching it. Mr. Davis then gave his method, which was to use the history as a reading book, encouraging his pupils to talk about the lesson, and giving ten credits for each perfect lesson. At the end of the week, an abstract of not less than fifteen lines is written, pupils being allowed to criticise each other. Mr. Johnson uses the history as a reader, and endeavors to impress the most important facts and dates upon their minds. Miss Ford thought it would be a good plan to have a series of readers on history. Miss Baker gave Prof. Childs' method, and Mr. Williams, Prof. Allen's method. Mr. Stanley thought there ought to be more histories and biographies in our public school libraries. After recess, the subject of Spelling was taken up, Mr. Williams introducing it, and giving his ideas as follows: He considers written spelling of more practical value than oral. He would have a list of words placed on the blackboard, erasing them just before recitation, then requiring his pupils to write them. He also dictates sentences, taking care to have them punctuated correctly, and capitals to be used when necessary. Miss Ford introduced the subject of Primary Arithmetic, followed by remarks from Miss Day and Miss Estill. The first exercise after recess consisted of an illustration by Mrs. Hines of her method of teaching Primary Reading. She did this by giving a lesson to a class of small children. Mrs. Cromwell then introduced the subject of Practical Arithmetic. Miss McGlinchey introduced Primary Grammar. Dr. Groton then spoke on

Graded Grammar, and the subject was discussed at considerable length. Miss Baker then introduced Reading as taught in the Third and Fourth Readers. A discussion on School Discipline was then opened by F. M. Winchell, and continued by Mr. Williams, Mr. Davis, Mrs. Cromwell, Miss Baker, Mr. Johnson, Mr. Wonn, Mr. Styles, Gen. Wood, Miss Ford, Mr. Fairfield, Mr. Hall, Dr. Spalding, and Miss Estill. The report of the Committee on Resolutions was read by the secretary, and adopted, after which the Institute adjourned.

SOLANO COUNTY.

An interesting and instructive session of the Teachers' Institute of this county was in Dixon on the last week in September.

This is one of the most populous counties in the State. The schools are generally taught by first-class teachers (some of whom, like Towle of Vallejo, rank among our best), and superintended by A. W. Sutphen in a highly efficient manner.

On opening the Institute for 1881, the Anniversary Song was beautifully rendered, Mrs. McBain presiding at the organ. Prayer was offered by Rev. Dr. Cole. Mr. J. S. Brown, principal of the Dixon Grammar School, delivered an able and eloquent address of welcome. Pres. Sutphen read a lengthy and well-written address, replete with practical suggestions and hints to teachers. During the delivery of the address, the following passage was loudly applauded: "A good school trustee is the rarest work of God." The Students' Reunion was next rendered, and the Institute proceeded to the election of officers. L. Weinmann and W. S. Babcock were elected Vice-Presidents; J. S. Brown of Dixon was elected Secretary; and Miss Lucy Haile, of Rockville, was appointed Assistant Secretary, Mrs. H. F. Pray of Toland Grammar School read an interesting essay on Primary Teaching. W. S. Babcock, with a class of teachers, gave a lesson in Fractions. This was followed by a discussion of the subject, participated in by Messrs. Frick, Richards, Tilson, Grove, and Mr. Wood of Binghamton. George C. Richards illustrated his method of teaching Percentage by use of the blackboard. Prof. Childs, ex-superintendent of public schools in this county, but now a teacher in the State Normal School, was called upon, and responded in a few general remarks upon the best method of conducting the exercises of the Institute, and closed with an interesting lesson in Book-keeping.

In the evening, the exercises began by the excellent rendition of a beautiful duet, I Live and Love Thee, by Misses Annie Olney and Emma Martin. State Supt. Hon. F. M. Campbell was then introduced, and delivered an able address upon The Barriers to a True Education. The lecture was written in Mr. Campbell's usual forcible and elegant style. Mr. Frizell of Dixon closed the exercises with a well-rendered solo, Killarney.

On the second day, the Institute met at 9 A. M., and was opened with prayer by Dr. Cole. State Supt. Campbell and Prof. Childs made some humorous allusions to the "gentle zephyrs" blowing from the north. Prof. Childs continued the lesson in Geography. L. M. Frick explained his method of teaching Orthography, which called out a spirited discussion, which was participated in by Mrs. Eddy, Miss Drake, Messrs. Childs, Campbell, Tilson, and Towle. The remarks of Mrs. Eddy were especially spirited, and elicited hearty applause. A. P. Sanborn delivered an exceedingly humorous address, the subject being Geography. Prof. Childs followed with illustrations of his method of teaching Geography.

The exercises of the afternoon were enlivened by the presence of Prof. Price of San Francisco, and Prof. McChesney of Oakland. C. B. Webster read an interesting paper on Popular Education. Prof. Price read an essay on Vocal Music, taking strong grounds in favor of teaching it in all public schools, and giving various blackboard illustrations. Prof. McChesney's explanation of his method of teaching Language was quite full and instructive, and the passage of strips of paper among the audience, with the request that each draw a word picture, using as a basis the word "running," created no little amusement. This lesson was perhaps the best presented of any brought before the Institute. Mr. Sickal also made entertaining remarks on the same subject.

In the evening, Prof. McChesney delivered a lecture on Stars and the Spectroscope, giving in detail the motions of the heavenly bodies, and describing the different planets, giving their size, velocity and other interesting information.

On the third day, Prof. Childs gave a lesson in History, explaining his method of teaching by means of elaborate blackboard and chart illustrations. The Hon. F. M. Campbell followed with entertaining comments on the methods of teaching History. Mr. J. R. Tilson followed with an essay on Intellectual Arithmetic. Clara C. Bowers read an interesting paper on Our Profession. By special request, State Supt. Campbell recited a parody on The Chinese Must Go. Mr. Childs gave a fourth lesson in History. Hon. F. M. Campbell took leave of the Institute in a neat little speech, after returning thanks to the teachers and the good people of Dixon. Mrs. Bagley read an instructive essay on the subject of Arithmetic in our Primary Schools. Prof. Congdon made extended and humorous remarks on Reading. L. G. Harrier read a bran-new essay on a worn out topic, and did it in an entertaining manner. Prof. Childs closed the afternoon session with another instructive lesson on Constitutional History. The evening session was entirely given up to a social reunion of the teachers.

On the last day, the exercises commenced with a lesson in Elocution by Prof. Shakespeare, assisted by a class of gentlemen. The subject of Penmanship was taken up by Prof. Childs, who discussed more particularly the manner of sitting at the desk, the proper method of holding the pen, and the position of the body. The subject was further discussed by Messrs. Brown, Burns, and Webster. Prof. Shakespeare followed with a lesson in Drawing, by means of blackboard illustrations. Miss C. Barry read a carefully digested paper on School Management and School Government. Supt. Sutphen read the amendments to the school law, and explained them in detail. C. B. Towle gave an address on Public School Libraries, giving the results of the investigations of the county board in relation to the matter.

After the passage of resolutions complimentary to Supt. Campbell, Prof. Childs, Profs. McChesney, Price, Shakespeare, and Sutphen, the song Beautiful Golden Sometime was rendered, the teachers standing, the President's gavel fell, and the annual session of the Solano County Institute for 1881 was adjourned.

NEWS RECORD.

Educational.

Prof. J. Baldwin, well known as the principal of the State Normal at Kirksville, Mo., has just been tendered the presidency of the Sam. Houston Normal Institute at Huntsville, Texas. The school is well endowed.

The unanimous re-election of Mr. George Howland to the superintendency of the Chicago schools was richly earned by this able, practical educator, and argues well for the future of the schools of that city. Mr. E. C. Delano, who filled the position of Assist. Supt. for four years with ability, was also re-elected. Mr. E. O. Vaile has been elected a teacher in one of the Chicago high schools. The school principals of the Chicago schools were nearly all re-elected. Among the latter was Mr. Jeremiah Mahoney, who wield-

ed so trenchant a pen as editor of the *Educational Weekly*.

From the report of the *Bureau of Education* for 1879, just received, we cull the following facts of general interest.

The total school population in the States for 1879 is 14,782,765; number enrolled in public schools, 9,328,003; average daily attendance, 5,223,100, six States not reporting.

The total number of teachers employed in the public schools of the States was 207,163; in the Territories, 2,523, Idaho not reporting, and in Indian Territory only the Choctaws.

All the States and Territories, save Georgia, Idaho, New Mexico, and three nations of Indian Territory, report the average salaries of teachers. In the States the wages

of men vary from \$25.54 a month in South Carolina, to \$84.46 in Nevada; the wages of women, from \$22.83 in New Hampshire, to \$83.00 in Nevada; of the Territories, the District of Columbia pays the highest salary to men, viz., \$89.47, and Arizona the highest to women, viz., \$68.00. In Maryland the average is the same for both sexes, viz., \$43.49; this is also the case in the Choctaw and Seminole tribes of Indian Territory, where the average is \$50.00 a month. The greatest difference between the salaries of men and women is in Massachusetts, where the former receive an average of \$67.44 a month; the latter, \$33.50.

The total annual school income reported by all the States and Territories is \$83,788,074; annual expenditure, \$78,191,522, of which \$8,457,194 were expended for buildings, apparatus, etc.; \$808,549 for salaries of superintendents, and \$54,078,321 for teachers' salaries. The estimated real value of sites, buildings, and all other school property is \$178,294,155, nine States and three Territories not reporting. The expenditure per capita of the school population varied from 95 cents in Georgia, to \$15.26 in Massachusetts, and per capita for enrollment in public schools from \$1.41 in North Carolina, to \$17.17 in California.

In the school system of each State provision is made for the examination, licensing, appointment, and supervision of teachers; but unworthy influence, as patronage and favoritism, too often, in fact, determine the appointment; while the tendency to tamper with teachers' salaries, and the uncertain tenure of their office, hinders still further the progress of the rural schools.

Ohio has no State Normal School; Kentucky, Louisiana and Oregon none supported by public funds; and Delaware, Florida and Nevada none of any class. The number of graduates was 3,347, of whom 2,094 have engaged in teaching. Drawing was taught in 132 of these schools, and vocal music in 157. Ninety-seven reported chemical laboratories; 119, philosophical apparatus; 72, museums of natural history; 32, gymnasiums; and 90, model schools. In the libraries there were 129,254 volumes, an increase of 10,364 over the same for 1878.

The number of universities and colleges reported is 364, with 4,241 instructors and 60,011 students. Of the instructors, 3,506 are in collegiate departments, and 735 in preparatory. Of these students, 31,555 are in collegiate departments, and 27,467 in preparatory departments, and 989 are not classified. College libraries contain in all 2,391,991 volumes, which is an increase of 69,963 volumes during the year; there are also 395,846 volumes in the libraries of college societies. The financial summaries show the value of grounds, buildings, and apparatus to be \$37,209,354; amount of productive funds, \$40,258,937; income from productive funds, \$2,684,077; receipts for the

last year from tuition fees, \$1,929,060; receipts from State appropriations, \$482,445; aggregate amount of scholarship funds, \$2,012,042.

Under the head of schools of science 81 schools are reported, viz., 45 endowed by the national land grant of 1862, 34 not so endowed, and the United States Military and Naval Academies. The schools endowed by the act of 1862 report 458 instructors, 3,528 students in regular courses, 627 in partial courses, 92 in graduate courses, and 1,577 in preparatory courses. The 34 schools not so endowed report 315 instructors, 4,000 students in regular courses, 102 in partial courses, 15 in graduate courses, and 367 in preparatory courses. In the schools of the former class there were 2,503 State scholarships and 117 other free scholarships, and in those of the latter class, 20 State scholarships and 97 other free scholarships. The total number of volumes in general libraries was 178,624, and in society libraries, 6,658.

The schools endowed by the national land grant report value of grounds, buildings, and apparatus, \$4,780,846; amount of productive funds, \$6,048,745; income from productive funds, \$424,986; receipts for the last year from tuition fees, \$76,546; receipts for the last year from State appropriations, \$232,427. With reference to the preparatory departments reported by 28 of the institutions, the Commissioner observes:

"An examination of the studies pursued in these departments shows that they are not intended to provide special preliminary courses required by the subsequent collegiate courses, but are necessitated by the low attainments of candidates in the ordinary elementary branches."

And again:

"*Standard of Admission.*—The requirements for admission, especially to such of the institutions as do not include a classical course, must in general be called very moderate, a condition which in the case of the colleges included in part I seems to have been necessary in order that they might be brought within the reach of the class of students for whose benefit the grant was originally made. The only special tendency to be observed either in the preparatory course or in the standards of admission is the omission of Latin and Greek or the substitution of French and German in the place of Greek, and in a few instances an extension of the requirements in mathematics for students entering upon the scientific or technical courses. This practice implies the conviction that primary and secondary instruction should be the same for all classes of students, which is also the prevailing opinion in Europe."

The funds of the colleges endowed by the act of 1862 are derived from the proceeds of the land grant, and from State, county, and municipal appropriations.

The amount of moneys received from State appropriations by thirty-three of the colleges since the dates of their organization is \$4,325,053. The amount received by thirty-seven from sales of United States land and scrip is \$6,862,405. Twenty-seven institutions, which state the amount from both sources, received from the former \$3,758,971 and from the latter \$5,154,737.

With very few exceptions the colleges report chemical and physical laboratories among their appliances, museums of technology and natural history are multiplying, and above forty experimental farms, stations, and gardens are in operation. The experimental work conducted by means of the farms, etc., includes tests of soils, fertilizers, cereals, fruits, the care of stock, the culture of fruit and forest trees, of hedges and flowering plants, the care of bees and poultry, and dairy management. In addition to the immediate advantage of this practical work to the students, the results, as communicated through farmers' institutes and general and special reports, are found to be of great service to all engaged in agriculture, horticulture, etc.

Ten of the colleges report workshops and four of them printing-offices among their resources.

Much valuable information is presented concerning the conduct and practical working of the most important of these schools of science.

The following facts are selected from a brief summary of the condition of agricultural education in several European countries:

The teaching of agricultural science in Europe is not everywhere limited to special schools; on the contrary, it is a regular subject of instruction in a number of other schools. In Germany, horticulture and arboriculture have been obligatory branches of the Normal Schools since their foundation, and there are few elementary schools in rural districts where these branches are not taught. In France, Belgium, Switzerland, Austria, Sweden, Denmark, and the Netherlands the Normal School course embraces notions of agriculture. This agricultural instruction in Normal Schools is, of course, of an elementary character, the scientific instruction being left to the special schools of agriculture which are found in every State, or to the agricultural sections connected with several schools of veterinary surgery or schools of forestry.

AUSTRIA.—The leading agricultural school is the Imperial Agricultural College of Vienna, which had 167 students in 1875-76. Besides this, there were 69 schools of agriculture, with 2,035 students, and 174 agricultural evening schools, with 5,537 students. Agriculture was also taught in 2,128 elementary schools, arboriculture in 4,034, bee culture in 1,486, and silk culture in 862. In connection with the elementary

schools there were 3,215 orchards and 4,032 gardens, while farms were connected with each of the 69 schools of agriculture.

DENMARK has one of the most famous schools of agriculture in Europe. It is styled the Royal Agricultural and Veterinary School, and is situated at Copenhagen. In addition to this high school there are about one hundred lower agricultural schools throughout the country, styled Farmers' High Schools. The course in these occupies six months.

FRANCE.—There are three kinds of agricultural schools in France, the farm schools (former-ecoles), the departmental schools of agriculture, and the National Agricultural Institute (Institut National Agronomique). The last was formerly situated at Versailles, but was transferred to Paris in 1876. In 1877 it had seventeen professors and ninety-six students.

GERMANY has at present over 150 schools of agriculture, horticulture, arboriculture, viniculture, and meadow culture. Agriculture has greatly improved in Germany since the foundation of agricultural experiment stations. The first of these was established in 1852, at Mockern, Saxony.

GREAT BRITAIN: (1) *England.*—The Royal Agricultural College was established at Cirencester, in the county of Gloucester, in 1849. Agricultural education in England is left to private enterprise, and the name of "Royal College" does not imply supervision or assistance by the State. The college is situated on Lord Bathurst's farms, near the town of Cirencester. The patron is the Prince of Wales, and the institution is controlled by a board of management of twelve members, of which the Duke of Marlborough at present is president. The number of resident students is about seventy-five.

(2) *Scotland.*—In Scotland agricultural education has been taken charge of by the Highland and Agricultural Society, which, by a supplementary charter granted in 1856, was empowered to grant diplomas. The subjects of examinations are the science and practice of agriculture, botany, chemistry, natural history, veterinary science, field engineering, and book-keeping. In 1876 there was established the North of Scotland School of Chemistry and Agriculture, at Aberdeen.

(3) *Ireland.*—Ireland is the only part of the United Kingdom that has a regular system of agricultural education. In that system there are four steps. In the first place, all the national (elementary) schools are obliged to use an agricultural text-book. In the second place, there are 115 of the national schools that are selected as schools which have not only a teacher but a farmer and a small farm attached, and form national agricultural farm schools. In the third place, there are sixteen national model agricultural schools with model farms attached.

And in the fourth place, there is the Albert Institute, at Glasnevin, which is in reality the national agricultural college of Ireland. The second and third classes of schools receive assistance from the State; the Albert Institute is supported by the State. The institute has a farm of 180 acres.

At the State University Convention recently held at Albany, Professor Gardiner of that State read a paper on the "Education of the people, and their relation to the General Government." Statistics show that in 1870 the voting population of the United States was 7,623,000; the voting population of the Southern States being 2,775,000. The number of illiterate voters in the United States is 1,580,000; in the Southern States 1,123,000. Twenty per cent. of the entire population of the United States, and forty-five per cent. of the population of the Southern States, cannot read their own ballots. There were 9,297 votes cast at the last election, and it is estimated that from 21 to 22 per cent. of this number were cast by men unable to read the names on the ballot. Sixteen Southern States contained one-third of the whole vote of the country, and three-quarters of that vote was illiterate. In the State of New York, there are 77,120 voters unable to read. Pennsylvania has 67,108; Illinois, 4,477; Ohio, 48,970. The entire illiterate vote of the Eastern, Middle and Western States amounts to 475,000. Most of this illiteracy is in cities, and it is rapidly growing. 1870 showed the illiteracy of our voters at one-sixth of our population, and 1880, one-fifth in this State alone. These figures, if they mean anything, mean that compulsory school laws are absolutely necessary.—*Christian Union*.

The Archbishop of Canterbury presided, on June 22d, at the annual meeting in London of the National Society for Promoting the Education of the Poor in the Principles of the Established Church. The Archbishop mentioned that the average attendance at the Society's schools was 1,471,000, while at the board schools it was only 769,000. He desired to work cordially with the School Board, and hoped they would embrace every opportunity left to them of giving religious education where it was demanded.

The prospective school fund of Texas is something wonderful. By constitutional provision, the proceeds of her sales of public lands go to this fund, and there are already \$2,000,000 in the treasury and 40,000,000 acres of land to sell. The proceeds, at a very moderate estimate, will amount to \$100,000,000, which is an amount equal to the aggregate school-funds of all the other states.

Personal.

Speaking of the Chinese treaty not long ago, Senator Hoar quoted St. Paul; "For God had made of one blood all the nations of the earth." "Quote the rest," said Senator Miller, of California. "There is no more," returned Mr. Hoar. "Oh, yes, there is," persisted General Miller, "and hath determined the bounds of their habitation."

The original of "Mary had a little lamb" was written by Mr. John Roulstone, of Boston, proprietor of a popular riding school, sixty years ago. "Mary," the owner of the lamb, is now Mrs. Tyler, of Somerville, Massachusetts.

Oliver Wendell Holmes says that "a free public library is as necessary to a town as a nest is to a pair of birds. Scholars are sure to be hatched in it sooner or later. There, too, you will see a good many old birds nestling, whether they breed and sing or not."

The Hon. Lionel Sackville West, the present British Minister at Madrid, will succeed Sir Edward Thornton as English Minister at Washington.

Dr. Thomas Corwin Mendenhall has returned to the Professorship of Physics in the Ohio State University, after serving for three years in a like position in the Imperial University at Tokio (Yedo), Japan.

Emperor William of Germany was recently presented with a curious pen, that supplies itself with ink while writing. The old Kaiser thanked the donor and said: "I should like to own a pen that would write only what is good and true; and then I wish all our journalists and reporters might each have one just like it and use no others."

Europe is to be blessed with a new king. The German authorities will request the Grand Duke of Baden to assume the regal title on September 20th, which is the twenty-fifth anniversary of his marriage with the only daughter of the German Emperor. If the Grand Duke accepts the proffered gift, the marriage of his daughter Victoria with the Crown Prince of Sweden and Norway will admit of being celebrated at Carlsruhe.

Ex-President Hayes resides at Fremont in a large double-house, of a manorial appearance, in the midst of a plot of thirty acres, and seems as happy and comfortable as possible.

Dr. John Warren, Dr. Collins Warren, and Dr. Oliver Wendell Holmes have been the only three occupants of the chair of Anatomy at Harvard Medical School during ninety-eight years.

By aid of his telephonic system, Dr. Cornelius Herz has, during experiments made under the auspices of the French postal au-

thorities, transmitted audible speech eight hundred miles.

Professor Barnard, of Columbia College, at the first session of the Geographical Society held at Vienna, September 15th, proposed to abolish our present system of A. M. and P. M., the hours of the day to be counted from one to twenty-four. A general meridian, passing through Behring Straits and dividing the globe into twenty-four meridians of fifteen degrees each, would give the world standard time.

General Notes.

At a County Institute recently, Prof. Allen of the State Normal School read the following answers to questions in physiology, given at an examination of girls in some English schools. The reading of this paper created great merriment, and a large audience, packed into a diminutive church building, and wearied with long exercises in cube root and grammar, the thermometer sporting up among the 90's, appeared decidedly refreshed. The next day, equally warm, the chairman read another list, which we give also, copied from answers given on papers sent in at a teachers' examination recently held in this State. The Institute exploded with laughter, and Prof. Allen and State Superintendent Campbell and everybody else present, admitted that they fairly discounted the English answers, and that we intelligent Californians have nothing to say to our English cousins. We invite all who intend soon to pass an examination to read and reflect.

In physiology, some of the questions were answered as follows:

"Mention any occupation which you consider injurious to health, giving reasons for your answer." This question especially appears to have puzzled them. One girl's complete answer to this question is, "When you have an illness it makes your health bad, as well as having a disease." Another says, "Occupations which are injurious to health are carbolic-acid gas, which is impure blood." Another complete answer, "We ought to go into the country for a few weeks to take plenty of fresh air to make us healthy and strong every year." Another complete answer is, "why, the heart, lung, blood, which is very dangerous." The word "function" was also a great puzzle. Very many answered that the skin discharges a function called perspiration. One girl says, "The function of the heart is between the lungs." Another says, "What is the function of the heart? Thorax." Another girl, in answer to the sixth question, says, "The process of digestion is, we should never eat fat, because the food does not digest."

Another class of errors is that of exaggerated statements, one girl answering, "A

stonemason's work is injurious; because when he is chipping he breathes in all the little chips, and then they are taken into the lungs." Another says, "A bootmaker's trade is very injurious; because the bootmakers always press the boot against the thorax, and therefore it presses the thorax in, and it touches the heart; and if they do not die, they are crippled for life." Several girls insist, that every carpenter or mason should wear a pad over the mouth; and one girl says, that if a lawyer does not wear spectacles, he will be sure to lose his sight.

The California answers are the following:

PRONUNCIATION.

1. Hypotenuse pronounced hyp'-o-tè-nuse.

2. Logarithms pronounced logar'-ithms.

WORD ANALYSIS.

3. Tautology — taught + logy — science of teaching.

4. Lapidary—the son of a shoemaker.

5. Locate the heart. In the left cavity of the stomach.

6. Derivatives from lex (law)—Lexington, according to law.

7. Hellenic—pretaining to hell.

DEFINITIONS.

8. What is the scapula? The back part of the top of the head, which an Indian takes off in battle.

9. Where is the golden horn? On the head of the golden calf.

10. What is a cotton gin? (1) A machine for planting cotton. (2) A machine for pressing cotton into bales for wearing. (3) A liquor made of cotton seed.

11. What is a thermometer? It is a magnetic needle suspended in a vacuum in a column of electricity.

12. Lethargy—the art of making leather.

13. Phlebotomy—the science of fleas.

14. Eucharist—one who plays euchre.

15. Who was Danl. Boone? Son of the old man Boone.

According to the United States census of 1880, the ten largest cities of California are as follows: San Francisco, 233,953; Oakland, 34,556; Sacramento, 21,420; San José, 12,567; Los Angeles, 11,183; Stockton, 10,282; Vallejo, 5,987; Alameda, 5,709; Grass Valley, 4,880; Marysville, 4,022.

OTHELLO. Introduction and notes by Rev. H. N. Hudson. Boston: Ginn & Heath. Price 60 cents.

This is another of the admirable series of Shakespeare's plays, which is designed for school use. We like this edition, and believe it, despite expurgations, or rather on that very account, the best adapted for the purposes designed of any edition before the public.

BOOK NOTICES.

THE AMERICAN NEWSPAPER. An essay read before the Social Science Association, at Saratoga Springs, September 6th, 1881. By Charles Dudley Warner. Boston: James R. Osgood & Co. 16 mo. 69 pp. Price 50 cts. For sale by all booksellers.

In this little volume we are told what our newspapers are, and what they should be. It is not so much a book for journalists, as for intelligent men and women generally. Mr. Warner shows us very clearly what molding influence the press has on human character and progress. We see why it is that in some communities, there is such astonishing unanimity in politics and religion. But he fails to emphasize what we believe equally true on the other hand, that the newspaper takes its tone and complexion from its constituency, and that whatever a community is, that will its newspapers be.

The book furnishes food for considerable meditation, and will well repay perusal.

THE FIFTH READER (of Lippincott's Popular Series). By Marcius Willson. Philadelphia: J. B. Lippincott & Co. San Francisco: J. A. Hoffman, 210 Montgomery St.

This book is a treasure-house of reading, that may be called of the most valuable kind.

If the aim of the reading book is to cultivate manner of expression—in a word, to teach elocution—this book will do it; if it is to furnish in a natural manner a store of useful knowledge, then again this book has no superior in securing that end.

As a text-book on geography—*i. e.*, the geography worth studying, because worth remembering—this book stands high.

The plan of the entire series is to localize events—presented in the form of a continuous narrative—around a home center of attraction. The same *dramatis persone* are brought on the scene in this book that have previously made the reader's acquaintance in the second, third, and fourth books. Some of them make a tour "around the world," and write to their friends a series of letters that form the body of the book. These letters are supposed to be written by some very intelligent young people, assisted

by their elders, in whose care they are, to their friends at Lake View (home). These letters are read and commented on at the Reading Club Saturday evening meetings, at Wilmot Hall. Where not contained in the letters, members of the club introduce brief characterizations of foreign people and countries, historic sketches and scenes, apt poetical quotations, etc., which add greatly to the interest of each chapter.

The style is not altogether narrative, as might be supposed. Adaptations, selections (both prose and poetry), descriptions, add infinite variety to the development of the book.

Instead of language lessons, as given in preceding books, there are some lessons in this book in the "Nature and Uses of Figurative Language." The treatment is simple and not beyond the comprehension of children, for whom the book is designed. In fact, the whole series is distinguished for careful grading.

Mechanically, the book is first-class: paper good, binding apparently strong, type large and clear, and illustrations excellent.

If any reader think the description highly drawn, let him get a copy. He will find we do it bare justice.

ELEMENTS OF CHEMISTRY. A Text-book for Schools. By Elroy M. Avery, Ph. D. New York: Sheldon & Co. Pp. 354.

All of Prof. Avery's text-books are noted for the simplicity of their style, their systematic arrangement, and the abundance of experiments by which every principle is illustrated. In this State, without agents to laud the merits of his book on Physics, it was adopted in many sections, altogether on the clear evidence of its adaptability in the school-room. The Chemistry is a book of precisely the same nature.

After a preliminary chapter on "The domain of Chemistry," chapter II. treats of "Water and Its Constituents," and so on, each chapter treating briefly of some one of the elementary groups.

What we must especially commend in this book is the good judgment with which

Prof. Avery omits matter of secondary importance. In the first part of the work, the experiments are generally simple in character, and do not require expensive apparatus. His explanations of symbols, nomenclature, molecular and atomic weights, are exceedingly clear. Some of his experiments have a practical tendency—a good point. The chapter on "Organic Compounds," while rather brief, is interesting and valuable.

On the whole, we can give this book the same hearty commendation bestowed on the *Philosophy*. Our high-school teachers should give it an examination.

In point of typography, binding, and illustrations, it is all that can be desired.

LIFE OF AGRICOLA, and GERMANIA. By P. C. Tacitus. Ed. by Wm. Francis Allen, A. M. Boston: Ginn, Heath & Co., 1881.

We have before us the above neat edition of "Agricola" and "Germania," in one little volume, and are very much pleased with it. The work will recommend itself to every classical teacher, both on account of the text and also for the judicious notes and historical references given in the appendix.

The author has wisely abstained from giving much grammatical aid to the student, as this is more the business of the teacher; but he has afforded help to the reader where assistance is really needed, that is, in understanding the historical and geographical difficulties, particularly the latter. The pupil will obtain much valuable information not usually found in larger editions, where more attention is usually paid to philological difficulties.

LITERARY NOTES.

There are further improvements in the December *Harper*. We had imagined it impossible to improve perfection. Teachers will find of especial value to read in school Prof. John Fiske's article on *How America Came To Be Discovered*. Among other noteworthy articles are, *The Bernadottes*, by Zabel Barnes Gustafson; *Prescience* (a poem), by T. B. Aldrich; *Journalistic London* (III.), by Joseph Hatton; *Annie* (a novel), by Constance Fenimore Woolson; *A Day in the House of Commons*, by J. C. Stockbridge; *Among Our Footprints*, by William Hamilton Gibson; *The Grave of William Penn*, by Alfred T. Story; *Monsters*, with eight illustrations,

by M. D. Conway; *A Laodician* (a novel), by Thomas Hardy.

For the uniformly high literary character of its papers, the *Atlantic Monthly* has no equal in American literature. As a journal for teachers, it stands side by side with the *Popular Science Monthly*, and no progressive teacher will be without both on his library shelves. The principal articles in the December number, exclusive of the two serials—Dr. Breen's *Practice* (Howells) and *The Portrait of a Lady* (James)—are, *Origin of Crime in Society*, Shakespeare and Berlioz, *British State Assassins* and the *Plea of Insanity*, *Socialists in a German University*, and *Caste in American Society*.

Henry Ward Beecher has resigned the editorial control of the *Christian Union*, with which for so many years he has been identified. Dr. Lyman Abbott, who has done most of the editorial work for some years past, will continue as managing editor. The *Christian Union* is the highest type of a true religious newspaper.

"THE CHILDREN'S GARFIELD HOME."—A new project in memory of the late President originates in the suggestion of a little boy, Willie P. Herrick, for founding a "Garfield Home" for poor and sick children by subscriptions from the children of America. Willie writes to the *New York Evening Post* as follows:

I felt very badly when our President died, and my brother and I think it would be very nice to have a home in the country for little sick children, Mamma thought that every little boy and girl could give from one cent up to twenty-five cents. We thought we could call it the "Garfield Home," and we also thought it would be very nice to have a picture of President Garfield in it. We would like all little boys and girls to join in this. Please put this in the paper, and also put in for the parents to tell the children.

WILLIE P. HERRICK.

NEWPORT, September 27th, 1881.

To this letter, inclosing a dollar as the contribution of four children, Willie's mother adds:

"The children are intensely interested and affected. Their earnest, childlike prayers and faith touched our hearts, and we have heard the same story from other parents. Great good might be accomplished by turning this tide of children's sympathy and love to practical use."

The *Post* having declined to act as banker of the fund, the *St. Nicholas Magazine* for Young Folks announces that it will reprint Willie's suggestion in its November number, believing that its young readers will be glad to learn of the project, and to give it practical aid; and the publishers of *St. Nicholas* have volunteered to receive and credit all subscriptions to the "Garfield Home" that may be sent them, with the understanding that if the total amount subscribed should prove insufficient for the founding of a Home, it may be applied in the form of a "Children's Garfield Fund" to the benefit of the Poor Children's Summer Home, or some kindred charity of New York City. Any persons interested may address or send moneys to

THE CENTURY CO., Union Square, (north), N. Y.

